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# The Province of Alberta

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IN THE MATTER OF "THE NATURAL  
GAS UTILITIES ACT"

—and—

IN THE MATTER OF an Enquiry into  
Scheme to be adopted for Gathering,  
Processing and Transmission of  
Natural Gas in Turner Valley

---

G. M. BLACKSTOCK, Esq., K.C., *Chairman*

Dr. E. H. BOOMER, F.C.I.C., *Commissioner*

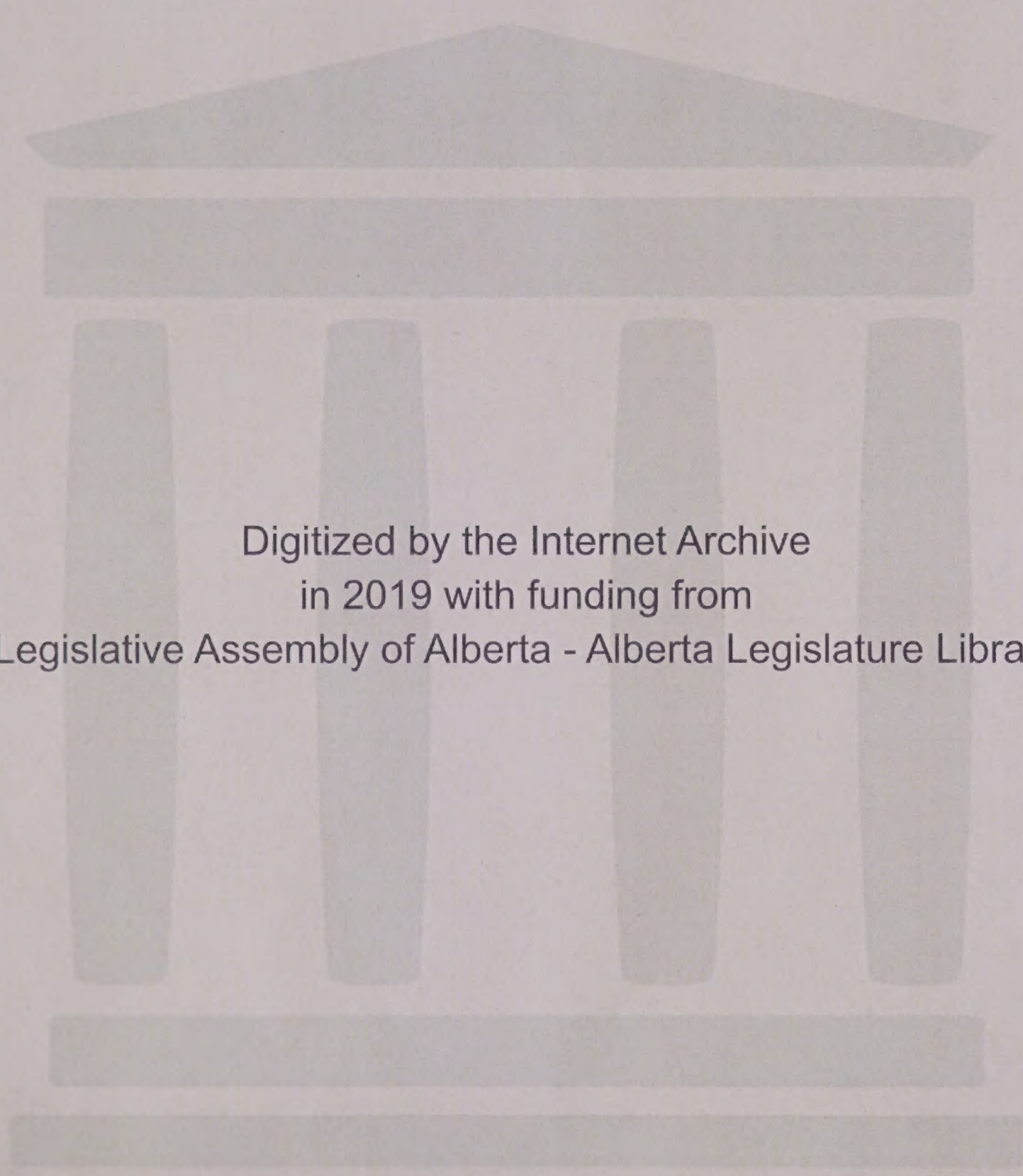
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***Session:***

**CALGARY, Alberta** January 21st, 1946.

**VOLUME** 63.





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I N D E X

VOLUME 63

January 21st, 1946.

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Hanina Zinder,  
Direct Exam. by Mr. McDonald.

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VOLUME 63,

January 21, 1946.  
Monday. 9.30 A.M. Session.

MR. McDONALD: Mr. Chairman, before calling Mr. Zinder, I have obtained from the Gas Company a rate schedule for 1913 and 1939, this is a composite statement of the Gas Company's schedules in fact, from 1913 to 1939 and the materials which have been used by Mr. Zinder in considering the rate situation are these statements, and I thought it would be to the advantage of all parties if this was filed as an exhibit. Mr. Brownie has told me that he will be able to get me copies during the course of the next few days.

THE CHAIRMAN: That will be Exhibit 134.

COMPOSITE STATEMENT FROM  
GAS COMPANY HERE MARKED  
EXHIBIT 134.

THE CHAIRMAN: And do you say you will have copies made?

MR. McDONALD: Yes, Mr. Chairman,

MR. BLANCHARD: And just what is it.

MR. McDONALD: A composite statement of the gas rate schedules from 1913 to 1939.

THE CHAIRMAN: I want two copies of it, Mr. McDonald.

MR. McDONALD: Yes, Mr. Chairman, we will get sufficient. I will now call Mr. Zinder.

HANINA ZINDER, having been recalled,  
direct examination by Mr. McDonald, continued.

THE CHAIRMAN: I wonder if Mr. Harvie is under the impression that we are not sitting until 10 o'clock this morning.



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MR. SMITH: Mr. Chairman, I do not know of any reason why he should not be here. I will call his office and see.

Q MR. McDONALD: Mr. Zinder, you prepared a statement or a report of the value of natural gas and elasticity of demand for natural gas in the City of Calgary, on behalf of the Producers' Committee?

A I have.

MR. McDONALD: I tender that, Mr. Chairman.

SUBMISSION PRODUCED HERE  
MARKED AS EXHIBIT 135.

Q MR. McDONALD: Now I think, Mr. Zinder, if you will just read the submission.

A This report is divided into two parts. Part I is devoted to a study of the value of natural gas in the City of Calgary. Part II is devoted to a consideration of the elasticity of demand for natural gas in the City of Calgary.

This report is supplemental to Submission No. 1 of the Producers' Committee of the Alberta Petroleum Association. In that submission it was stated that the value of natural gas at the burner tip places an upper limit on the value of natural gas at the well. In arriving at this maximum value of natural gas at the well, the costs of distribution, transmission, scrubbing, compression and gathering must be deducted from the value of the gas at the burner tip. These costs are part of the subject of inquiry in this proceeding and will thus only become determined and known at the conclusion of this proceeding.

Even with such costs known, the determination of this upper limit of the value of natural gas at the



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well is not a simple matter. If the value of natural gas for domestic house heating is taken as an example this would give a certain value at the well. An entirely different value at the well would be obtained if the value to the large industrial consumer of natural gas for processing, heat treating, or other purpose is taken as a base. Furthermore, the value of gas service to an existing consumer is different from the value to a customer making the choice between gas and some alternative for an entirely new home or plant. The existing customer has formed certain habits and must face certain changes involving, in some cases, an investment on his part in making the change. The composite of all these values as they exist in the market served would give a composite value of gas at the wells.

For the purposes of this report, it is assumed that deducting all costs, including return, of distribution, transmission, gathering, repressuring, and scrubbing, from the present retail rates leaves a margin for the gas at the well head of 2 cents per MCF. Under this assumption, if the value of natural gas at the burner tip exceeds the present rates it would indicate a well head value in excess of the assumed 2 cents per MCF.

The value of natural gas at the burner tip in relation to the rates charged also has a definite bearing on the elasticity of demand. Rates below the value of the service can be increased to a point equal to the value of the service without appreciable loss of market. Such loss as might occur would be in conservation of use by some instances, perhaps only temporarily, rather than any changing over by any customers to use of coal.

Now as to the value of natural gas:







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PART I - VALUE OF NATURAL GAS

Natural gas is principally used as a fuel. As such it is in active competition with other fuels; coal, oil and electricity. Since coal is the principal competitor, this exhibit is confined to a consideration of the relationship of coal to natural gas in the Calgary market. The value of natural gas is measured, therefore, in terms of coal as an alternative fuel.

Coal

For purposes of this study three classes of coal have been used, namely, Drumheller, Priddis and Blairmore. The price of Drumheller coal has been taken as \$8.30 per ton for domestic use, \$6.00 per ton for commercial and small industrial use, and \$4.00 per ton for large industrial use. The price of Priddis coal is taken uniformly at \$6.00 per ton and for Blairmore coal, uniformly at \$7.50 per ton.

Q MR. CHAMBERS: May I interject? Is that the laid-down cost at the consumer's premises?

A That is the price set by the Wartime Prices and Trade Board. I do not know. The price in the City of Calgary I understood.

Q It is in the City of Calgary anyway?

A That is right. I think, well, I do not know.

Q MR. McDONALD: Just a minute, Mr. Zinder, I think the \$8.30 was delivered at the house when it was used and the \$6.00 was not.

MR. STEER: Well, was it?

WITNESS: I do not know.

Drumheller coal is taken at 9,850 B.T.U. per pound;  
Priddis coal at 12,750 B. T. U. per pound, and Blairmore coal at 12,840 B.T.U. per pound.







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And at that point I would like to insert the following:

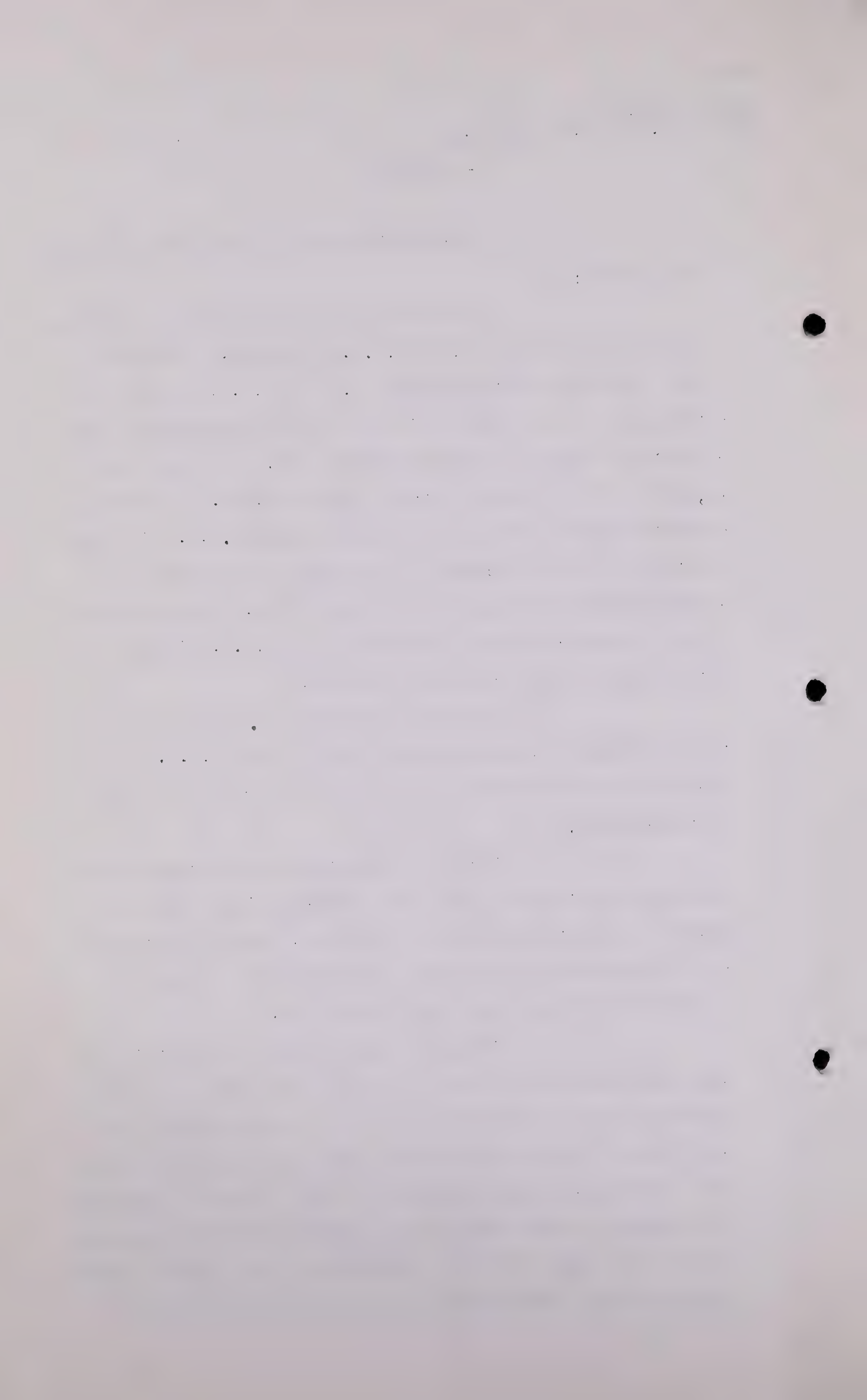
Reference to Appendix I shows an average for Crowsnest coal of 12,600 B.T.U. per pound. Blairmore coal comes from the Crowsnest area. The B.T.U. taken for this coal in this study and in all computations herein exceeds the average for the Crowsnest field. I have used 12,840 and the average for the field is 12,600. The more authoritative information as to the average B.T.U. of coal for this field was received subsequent to completion of calculations and preparation of this report. The difference would be small and the use of the higher B.T.U. figure in this report favors coal as against gas.

Attached as Appendix I to this report is a summary of the data upon which the above B.T.U. values per pound have been taken with respect to Drumheller and Blairmore coal.

There is activity which indicates that coal deposits in the area of the Highwood River west of Turner Valley will shortly be developed, but no information is available as to the extent of deliveries, markets or quality upon which the study can be based.

Like any other commodity, the price of coal is largely a function of supply and demand. Calgary has been using natural gas for fuel to such an extent and for so many years that what the price would be should there be a substantial conversion back to coal would be difficult to forecast. Coal prices at the present time are governed by the War Time Prices and Trade Board. The prices established by this Board must of course be used as a basis in







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preparing any estimates at the present time. However, it is clear that under normal conditions if a demand were to occur for the smaller sizes of coal, the prices for such sizes would increase because it might be necessary to crush the lump coal to supply this demand. At the present time, of course, the smaller sizes, forming a small percentage of the mine run are in a class of a by-product and the prices prevailing are the prices set for this condition.

At the present time, coal is shipped into Calgary mainly from Drumheller. The price of this coal delivered in Calgary for domestic use is \$8.30 per ton. This coal is very suitable for domestic furnace use.

Blairmore coal is suitable for stoker use since it is a medium volatile bituminous coal with good coking quality. The lack of these qualifications in the Drumheller coal works against its successful use in a stoker.

Another good coal is that produced near Calgary at Priddis.

And at that point, I would like to insert this statement:

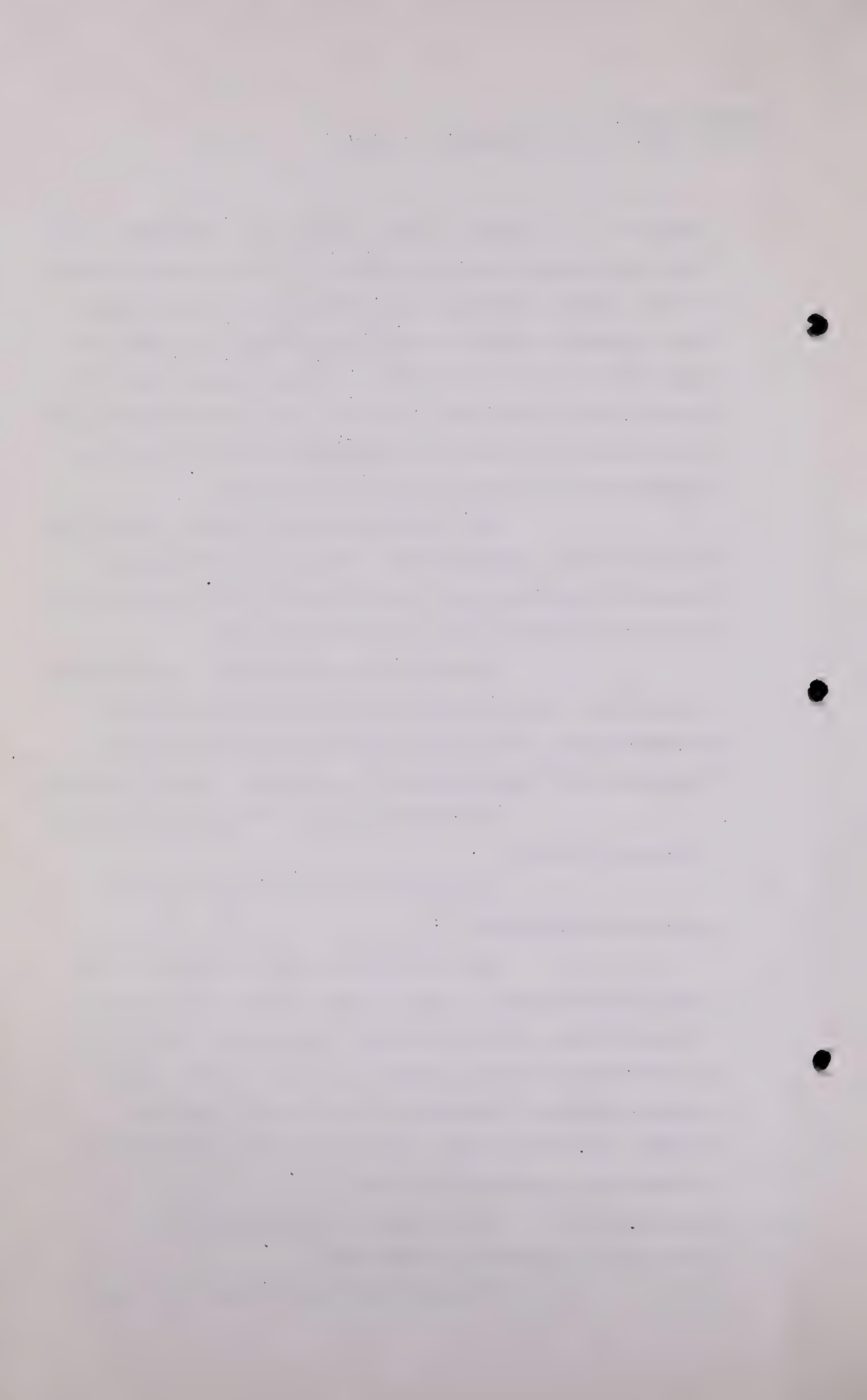
Priddis coal has been included in this study although there is only a very limited supply of this coal available, and I am informed the mine has never been equipped for operation at high capacity. In fact, very recent information received is that the mine has been flooded. This coal comes from a small mine just south of Calgary and is hauled in by truck.

Q MR. BLANCHARD: Do you say the mine is flooded?

A That is the information I have here.

It sells for \$6.00 per ton in Calgary







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but the supply is limited. Inquiries have indicated that the price of this coal may be increased at such time as the War-time Prices and Trade Board releases its control. The price of \$6.00 per ton has been used in this study even though it may be fair to assume that a higher price would prevail under normal conditions if the demand for this coal should increase, and I might add, and is made available.

Comparative Factors.

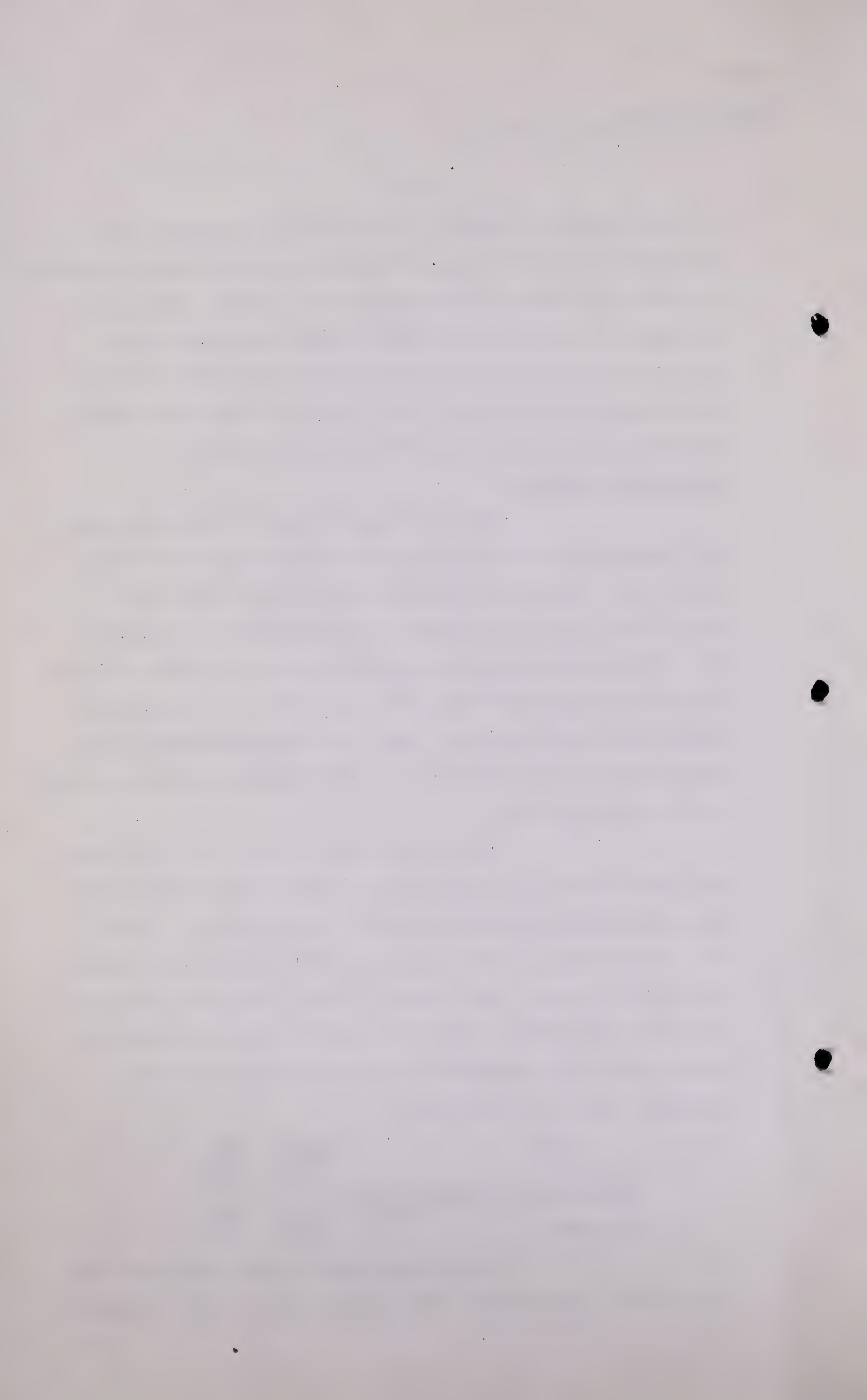
There are many factors which enter into any determination of the relative values of coal and gas as competitive fuels in addition to their price per B.T.U. One of the principal factors is the relative efficiency in the utilization of the heat content of the two fuels. It is generally recognized that, except for the very largest and most modern establishments, such as steam generating plants where design factors make equal efficiencies probable, gas is a more efficient fuel.

The relative efficiency of the two fuels will vary over wide limits and will vary widely for the same fuel as between different plants or installations. Under the circumstances, there is little authoritative information as to this factor. For purposes of this study the following relative efficiencies have been adopted, being the same as those used in the submission filed on behalf of the Gas Company, page 6 and Schedule II:

<u>USE</u>	<u>COAL</u>	<u>GAS</u>
Domestic	55%	70%
Commercial and small industrial	65%	75%
Industrial	65%	75%

Gas has many other advantages over coal which have a real value. It is necessary to store a substan-







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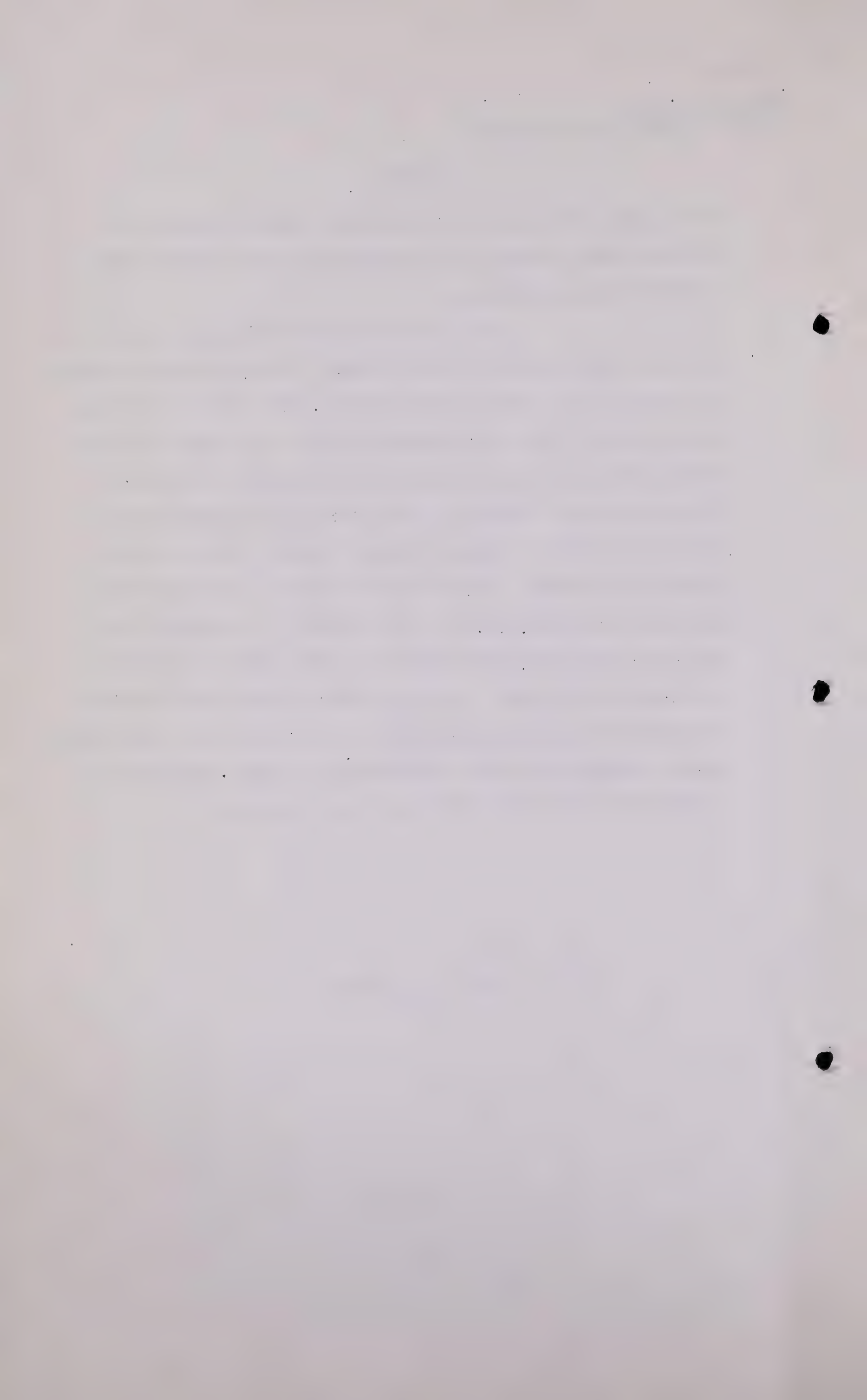
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tial supply of coal on the premises. This necessitates storage space, requires an investment in the supply, and creates a fire hazard.

Gas, being delivered and paid for as it is used, incurs none of these costs. There is also the cost of handling the coal on the premises, the cost of ash disposal and the cost of attendance labor. All these factors would definitely be considered and accounted for in any comparative cost analysis for a particular installation. It is difficult to evaluate these factors, however, in a general comparison. No attempt is made to place any value upon them in this report. Coal and gas are compared on a straight cost per B.T.U. basis adjusted only for relative efficiencies of use. In viewing the results shown by this comparison it should constantly be recognized that gas has an added increment of value represented by the advantages and savings in costs which have not been evaluated.

(Go to page 4930)





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#### Domestic Use

Chart No. 1 is a graphical comparison of the competitive relationship between coal and gas for domestic house heating. Rate No. 2 of the Canadian Western Company has been taken as representative for the price of natural gas for this service. This rate is as follows:

First 4 MCF .....\$1.50 per month

All additional MCF..... .25 per MCF

A sales tax of 8% is presently being added to all bills, but in this submission it is assumed that this tax will shortly be discontinued and the tax has not been taken into account in the following calculations. Under this rate the domestic consumer pays essentially an average of 25 cents per MCF for househeating gas. On an equivalent basis and under the relative efficiencies of 55% for coal and 70% for gas, Drumheller coal at \$8.30 per ton is equivalent to 53.6¢ per MCF, Blairmore coal at \$7.50 per ton is equivalent to 37.2¢ per MCF and Priddis coal at \$6.00 per ton is equivalent to 29.9¢ per MCF.

Thus, without allowing a value for the many other advantages of natural gas, its present price on a straight heating value basis for domestic use is well below competitive values. It may be considered that this is borne out by the fact that as early as 1937 when the price of natural gas in Calgary for domestic househeating was essentially 33 cents per MCF approximately 87% of the company's domestic consumers used natural gas for heating.

#### Commercial and Small Industrial Use

Chart No. 2 is a graphic comparison of the competitive relationship between coal and gas for commercial





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and small industrial use. For this comparison Rate No. 5 of the Canadian Western Company has been taken as representative of the price of natural gas. Rate No. 5 which is essentially one cent per MCF higher than Rate No. 2, Domestic Combination Rate, is as follows:

Fixed Charge - - \$1.00 per month, plus  
26¢ per MCF per month for all gas used.

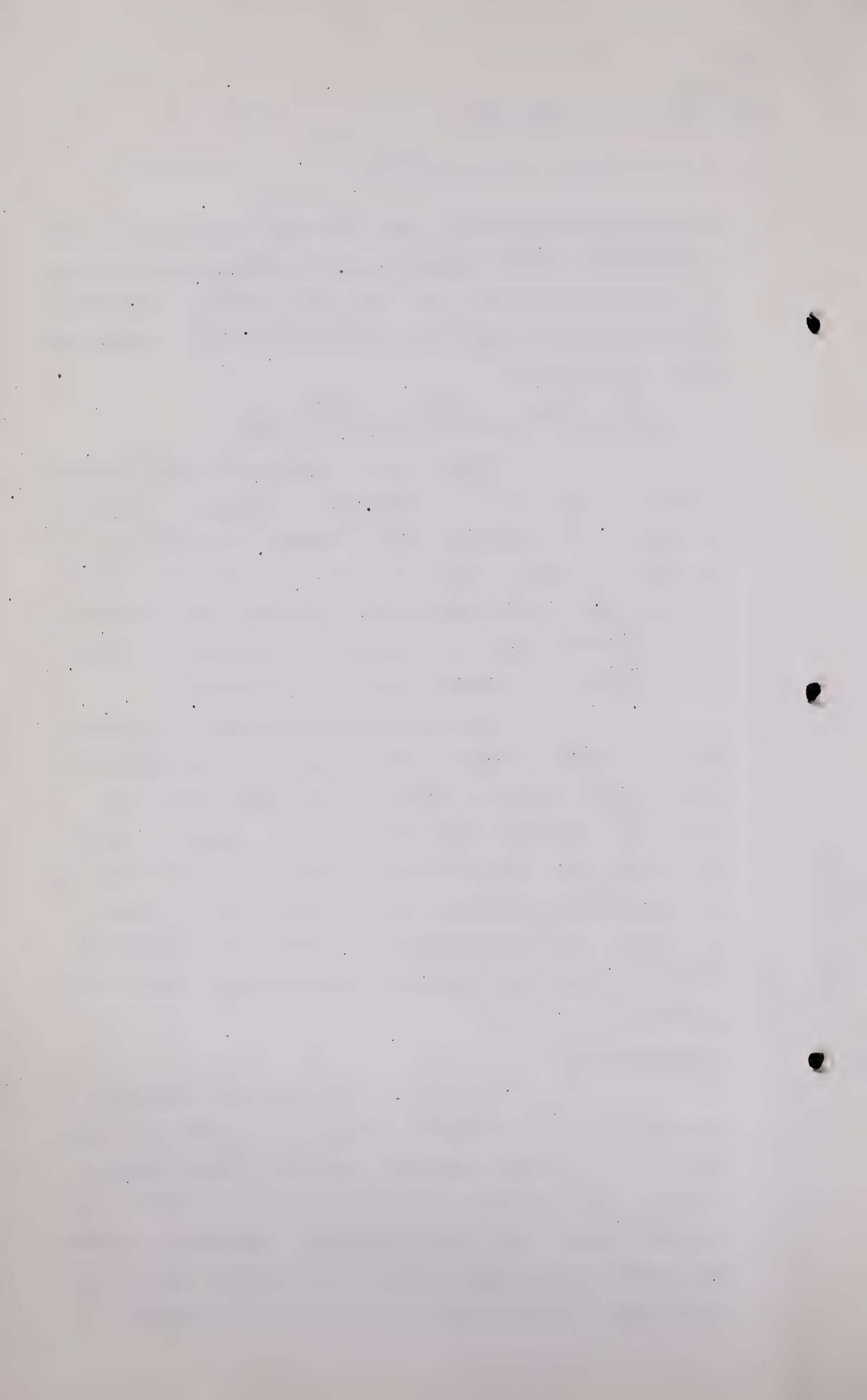
Under Rate No. 5 the commercial and small industrial customers pay essentially an average of 26 cents per MCF. On an equivalent basis using an efficiency for coal of 65% and of 75% for gas, Drumheller coal at \$6.00 per ton is equivalent to 35 cents per MCF, Blairmore coal at \$7.50 per ton is equivalent to 33.7 cents per MCF and Priddis coal at \$6.00 per ton is equivalent to 27.2 cents per MCF.

Here again, as in the case of domestic use, and with no allowance for the many other advantages of natural gas, its present price is well below competitive values on a straight heating value basis. Again, it may be considered that this conclusion is borne out by the fact that as early as 1937 when the price of natural gas in Calgary for such use was essentially 33 cents per MCF approximately 87% of all commercial customers served used gas for heating purposes.

#### Industrial Use

Chart No. 3 is a graphical comparison of the competitive relationship between coal and gas for industrial use. For this comparison Rate No. 4 of the Canadian Western Company has been taken as representative of the price of natural gas. Rate No. 4 is labelled "Commercial and Industrial Rate" and is advantageous to any customer whose annual consumption is sufficiently large to meet the minimum





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requirements of the rate. Thus, the title "Industrial Use" is used more for its general description than for complete accuracy. The rate is composed of three separate sub-rates, (a), (b) and (c) each rate being applicable to a given range of annual use. The essential parts of the rate are as follows:

	Rate 4(a) 7,016 to 10,000 MCF <u>Per Year</u>	Rate 4(b) 10,000 to 24,000 MCF <u>Per Year</u>	Rate 4(c) Over 24,000 MCF <u>Per Year</u>
Fixed Charge	\$18.00 per month	\$60.00 per month	\$120.00 per month
Consumption Charge	23¢/MCF	18¢/MCF	15¢/MCF

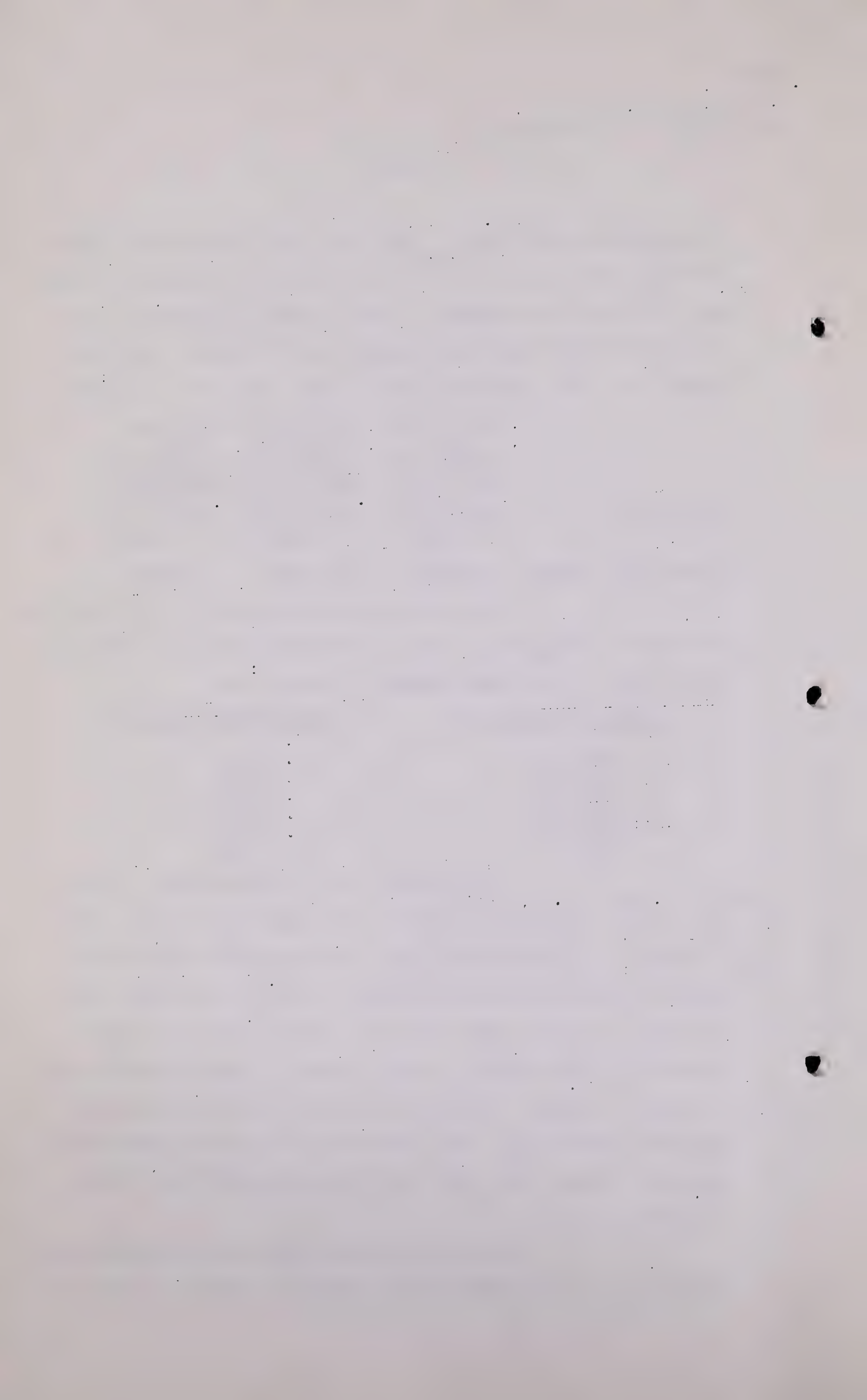
For convenience in considering this rate in relation to the price of coal a few average rates per MCF are shown below for selected points of monthly use:

<u>Average Monthly Use</u>	<u>Average Rate Per MCF</u>
600 MCF	26.0¢
1000 MCF	24.0¢
2000 MCF	21.0¢
3000 MCF	19.0¢
4000 MCF	18.0¢
5000 MCF	17.4¢

The Canadian Western Company has a still lower rate, Rate No. 6, Optional High Load Factor Rate, which is available to customers using over 24,000 MCF per year and whose use during the months of May to October, inclusive is not less than 40% of the total use for the year. The rate consists of three parts, a fixed charge, a demand charge, and a commodity charge. This rate is lower than Rate No. 4 for high load factors and large customers. The last block of the commodity charge (all over 4,000 MCF per month) is at 10.0¢ per MCF.

On an equivalent basis using an efficiency of 65% for coal and 75% for gas, Drumheller coal at \$4.00 per





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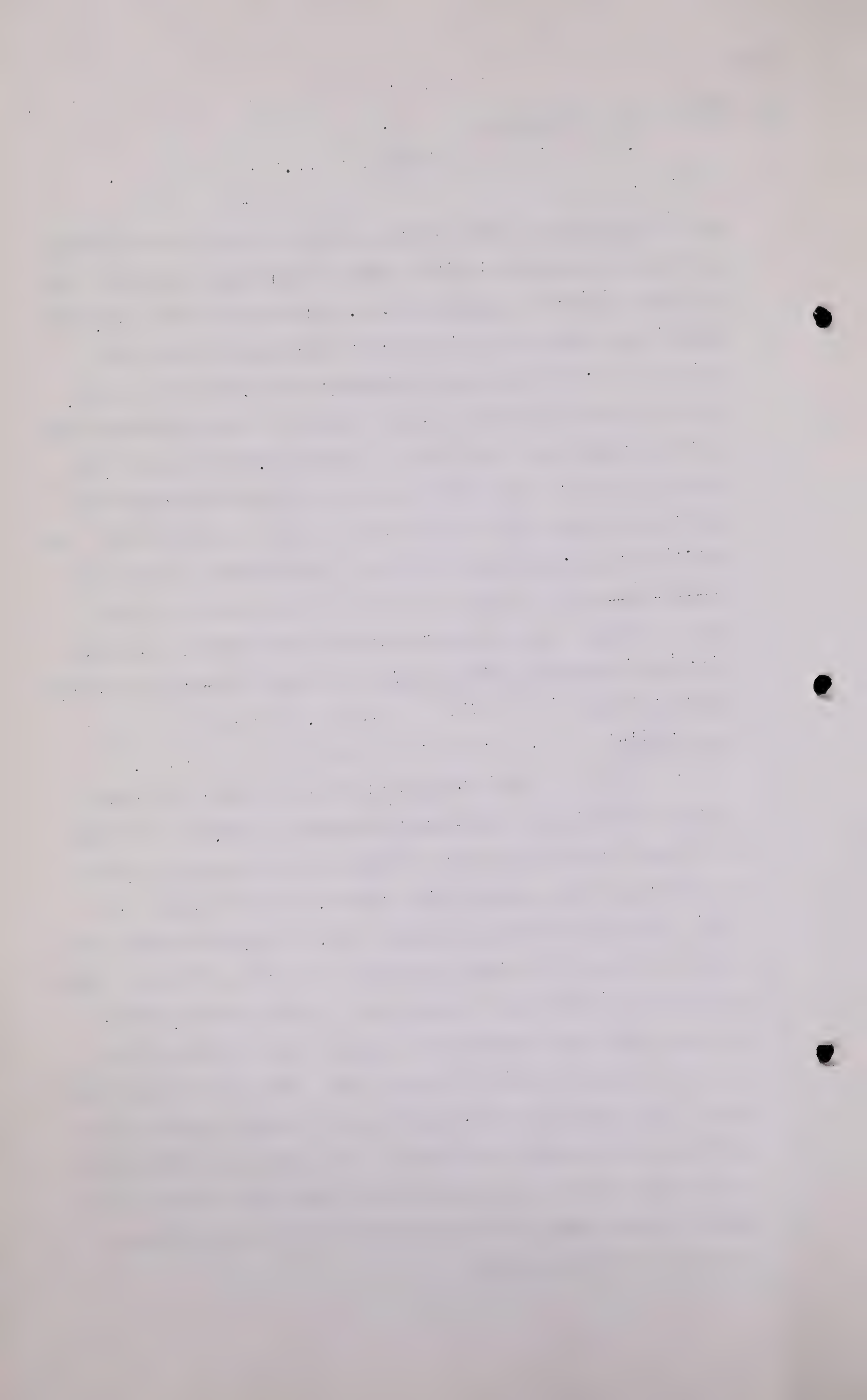
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ton is equivalent to 23.4 cents per MCF, Priddis coal at \$6.00 per ton is equivalent to 27.2 cents per MCF and Blairmore coal at \$7.50 per ton is equivalent to 33.7 cents per MCF. Without taking into account the many other advantages of gas, the price of gas for the larger commercial and industrial users is well below competitive levels except for consumptions close to the minimum under Rate No. 4. At 600 MCF per month, the average rate for gas is 26 cents per MCF whereas Drumheller coal at \$4.00 per ton is equivalent to 23.4 cents per MCF. As the monthly use increases, however, the average gas rate decreases, as shown above, to as low as 17.4 cents for 5,000 MCF per month. At this rate and under the relative efficiencies used Drumheller coal would have to sell for approximately \$2.98 per ton.

#### Conclusions

The foregoing analyses lead to the conclusion that for the three major classes of service the value of natural gas in the City of Calgary, as measured by coal as a substitute fuel, exceeds the present prices for gas. If, then, as assumed earlier, present prices and intervening costs leave a balance of 2 cents per MCF at the well, then the value of the gas at the well exceeds this 2 cents per MCF and for the most part by a substantial margin. This margin varies over the range of uses of natural gas. Thus, both from a cost and a value approach to the problem of fixing a price of gas at the well it would appear that a flat price per MCF is inconsistent with the facts and that a block rate of some form would be more nearly in harmony with the characteristics of service and of the market.





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MR. STEER: Mr. Chairman, before Mr. Zinder commences reading Part 2 of his report I would like to say that so far as we can judge this part of the report is based upon certain information which was applied for by Mr. McDonald and which was given and the information asked for was as to sales in the years 1929, 1939 and 1944. Those sales were given just as asked for with a warning that they were not necessarily significant and for the use to which they were put it is quite obvious, to say the least, they were not significant for this reason, that in 1933 a re-classification of accounts took place. The result of that re-classification was to take a large number of consumers out of the domestic class and put them into the commercial class, and to take a number of consumers out of the commercial class and put them into the industrial class, so that comparisons made on the basis of those figures that were asked for and were given are really not significant to the conclusions that Mr. Zinder may have drawn from them.

If the figures are desired year by year we are prepared to give them and I thought in fairness to the witness that possibly I had better make that statement before he commences his report.

MR. McDONALD: Those are the figures that you are going to refer to as Appendix 3 ?

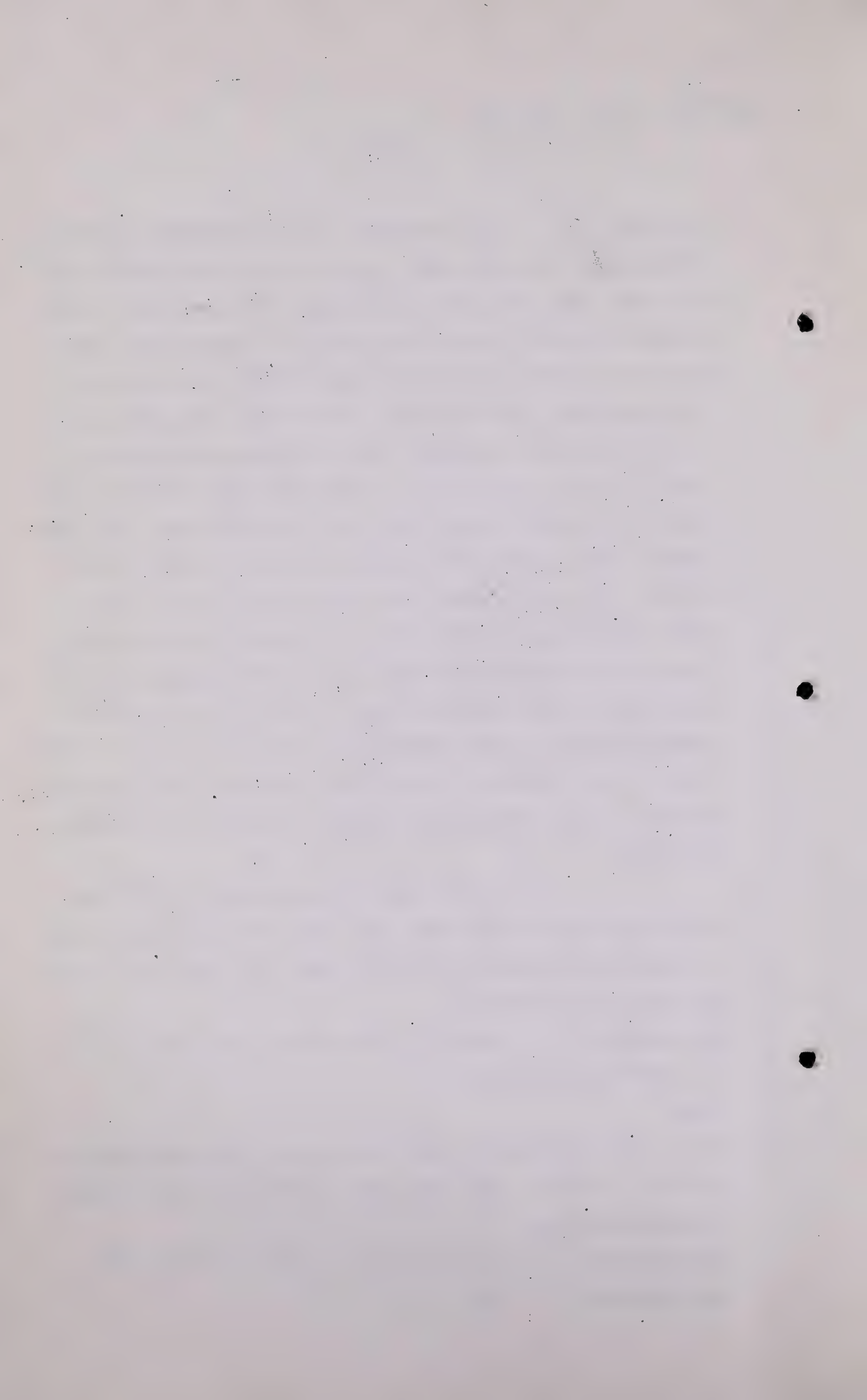
A Yes.

Q Just before you start I might add that we are adding Appendix 3 to Mr. Zinder's report and I can distribute it now without interrupting him.

THE CHAIRMAN: It will still be part of Exhibit 135 ?

MR. McDONALD: Yes.





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A I think the witness would like to make a statement if he can. I think that change in re-classifications of customers might very well affect the conclusions reached from the figures as we have them. It will not change in my opinion the principles as expressed. The figures were used largely as illustrative of the principles. I would like to see the....

Q THE CHAIRMAN: Would there be any advantage, Mr. Zinder, if you got the figures for another year following the classification of 1933 ?

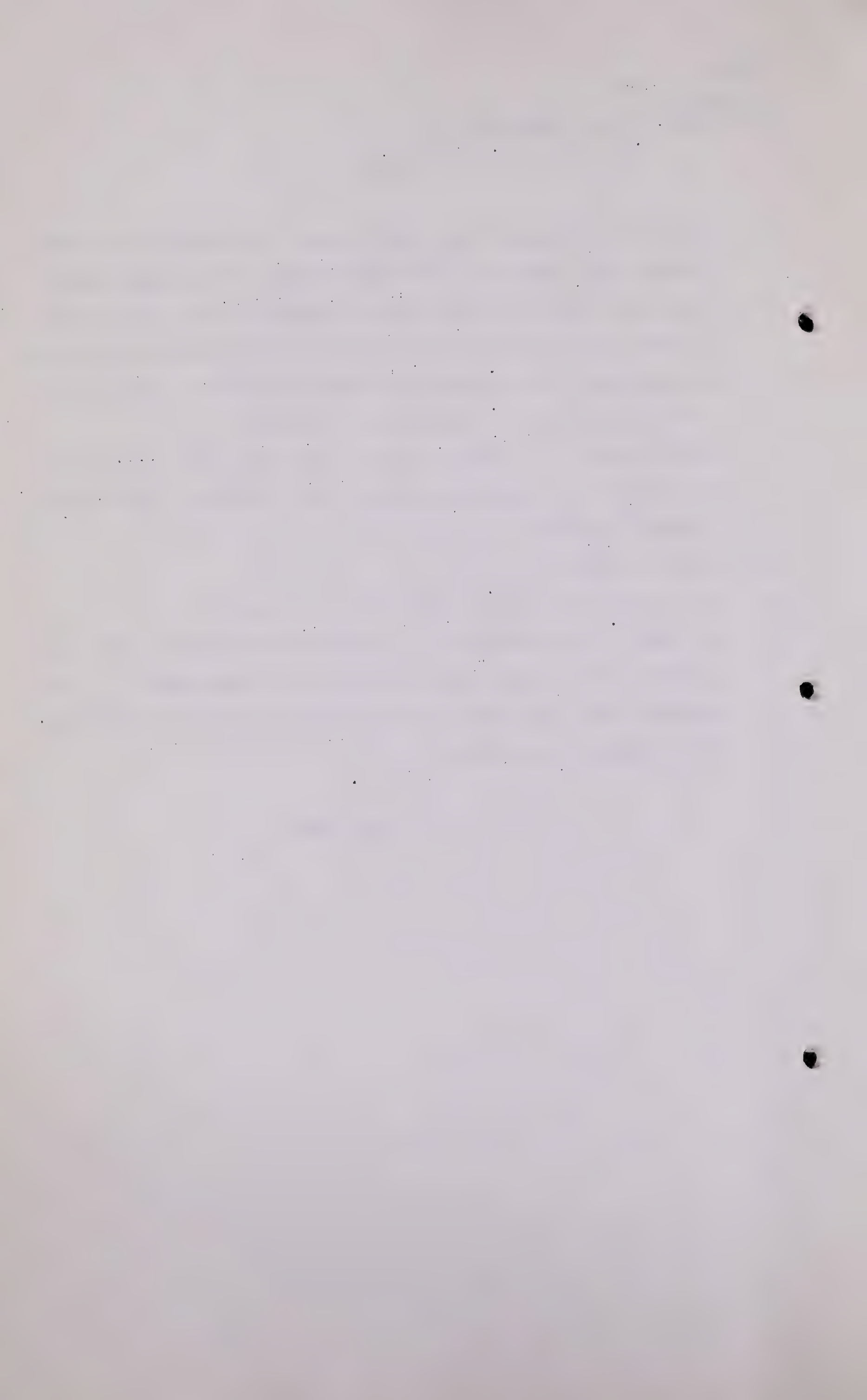
A That is right.

Q Mr. Steer is willing to give it if you wish it.

A It would be very helpful if I could have the figures year by year for 1929 to date, particularly those from 1933 on. I am assuming that from 1933 on the classification of the customers of the company was uniform.

( Go to Page 4936 )





H-1-1 10.00 a.m.

H.Zinder,  
Dir.Exam.by Mr. McDonald.

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THE CHAIRMAN: Except one little change a year ago, wasn't it, Mr.Brownie, in one of the Schedules, the High-low Schedule.

MR. STEER: There was an addition in the early part of this year,Sir, yes.

THE CHAIRMAN: Wasn't there a change a year or eighteen months ago when the Refineries came in?

MR. STANLEY DAVIES: The 26th of January, 1945, Sir.

THE CHAIRMAN: January 1945?

THE WITNESS: Did I understand you to say that there was also a change in the classification as between commercial and industrial, Mr.Steer?

MR. STEER: That is right.

THE CHAIRMAN: In 1933.

MR. STEER: It might have been domestic to industrial, but there were change .

THE CHAIRMAN: Well you can go on in the meantime, Mr.Zinder, and perhaps by noon you will have an idea of what you want and Mr. McDonald will no doubt see that you get it if Mr.Steer is willing to give it.

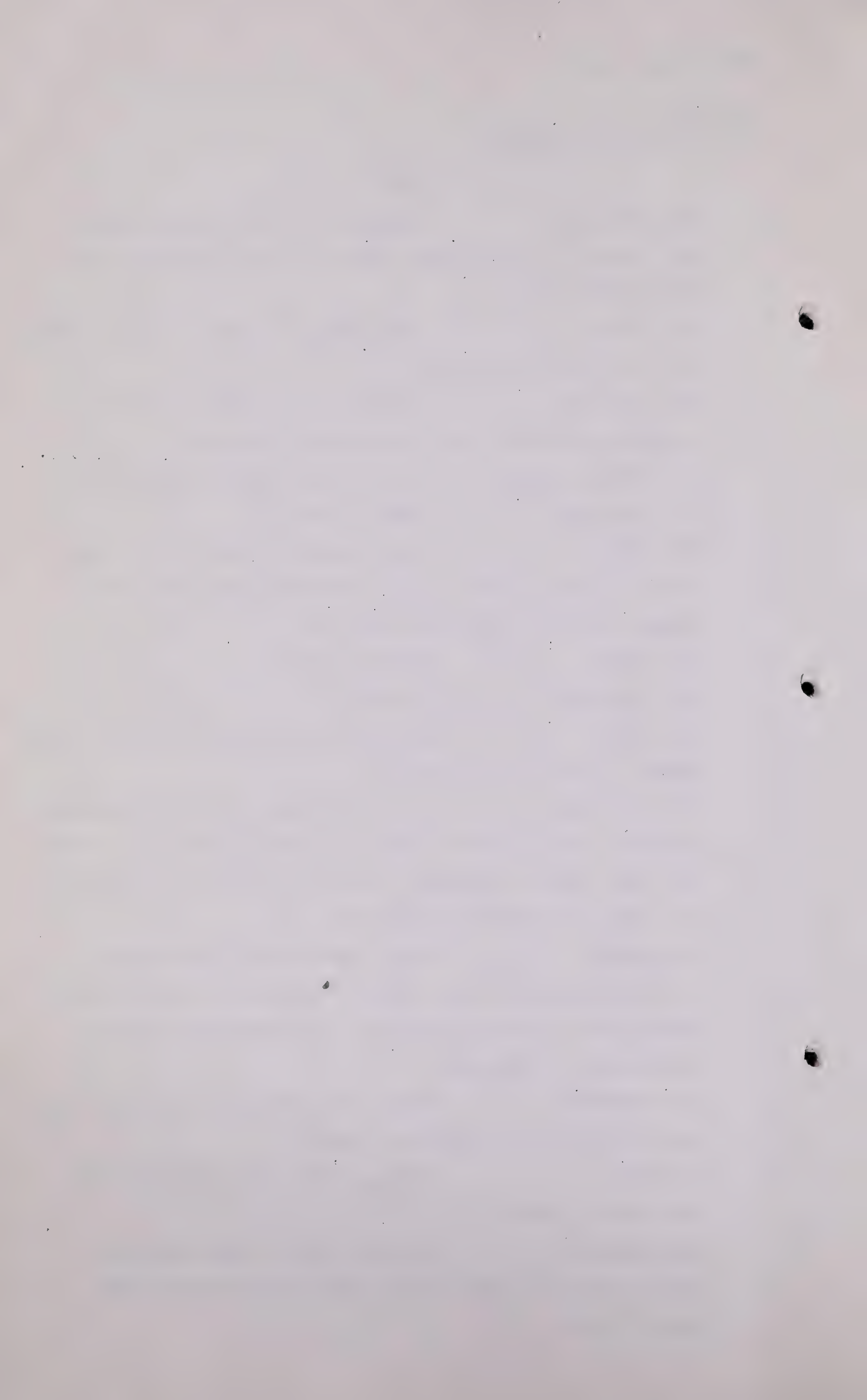
MR. STEER: All I want to say, Mr.Chairman, is that in our view that part of Mr.Zinder's report which he is about to read now is entirely misleading by reason of inaccuracies of figures.

THE CHAIRMAN: But I understood you to say that you are willing to give him these figures.

MR. STEER: Yes, give him any figures of that sort that he wants.

THE CHAIRMAN: you can make up your mind, Mr. McDonald what you want in that regard and Mr.Steer will give it to you.





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MR. McDONALD: Yes. But I understood at the time that those figures were the only ones that were available at the time I applied for them.

THE CHAIRMAN: That is what you asked for.

MR. McDONALD: Yes, but those were the only ones available at the time. If the rest can be made available, we would like to have them.

MR. STEER: We would like to know what is wanted. We were asked for those and we gave what was wanted, that is all. We are willing to give any other figures, but we would like a request in writing, so that we will know what is wanted.

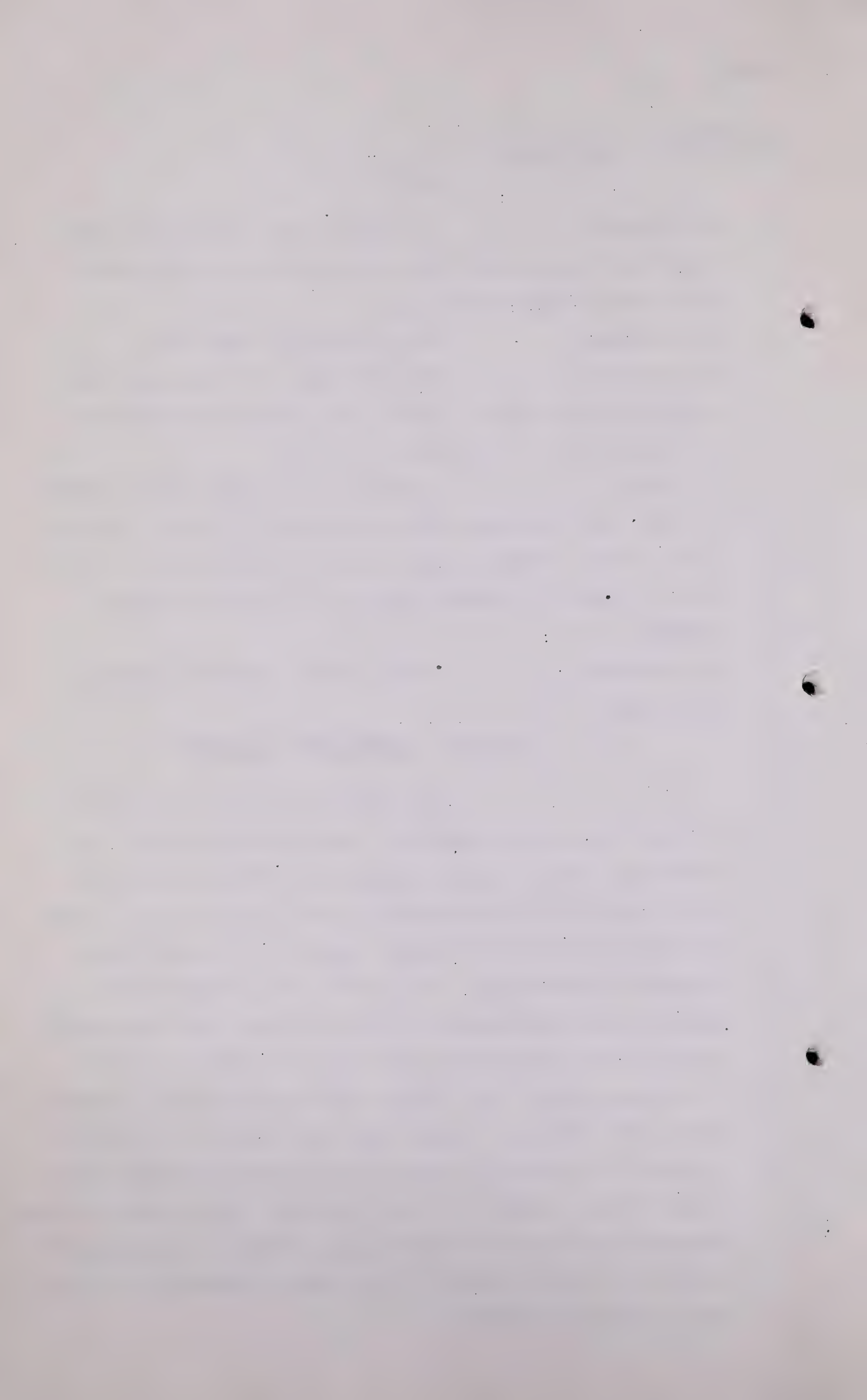
MR. McDONALD: We will make a demand in writing.

THE WITNESS:

## PART II - ELASTICITY OF DEMAND

The elasticity of demand for utility services is always an important consideration when any rate adjustment, down or up, is in prospect. The problem is not one of the general relationship of price to quantity. It can be generally stated for utility services, as for most other services or commodities, that as the price decreases the quantity sold will increase, and conversely, that as the price increases the quantity sold will decrease. Such a general statement, however, has little value in considering a particular rate problem. In any particular instance, it is the elasticity of degree of change in quantity which results from a given change in price that is important. This degree of change determines whether total revenues will increase with an increase in rate or to what extent, if any, total revenues will decrease with a decrease in rates.





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Dir.Exam. by Mr. McDonald.

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It is conceivable that the price of a given product may already be so low and the market already so saturated that any further reduction in price will bring very little change in the demand. Any change in price, when a company is operating at this point on the demand curve will cause almost a proportional change in total revenues. In an unsaturated market it is possible for a price reduction to cause an increase in volume so substantial as to result in an increase, rather than a decrease, in total revenue.

The measurement of the demand elasticity of any service is difficult, if not impossible. Many factors enter into such a determination in addition to the price and availability of alternative substitutes. It would be misleading, for example, to take the composite sales of any utility service as a basis for measurement or even as a guide. Such service is composed of a number of diverse classes of customers, each having a separate demand curve.

I would like to skip the next paragraph which deals with the figures and go on to the principles, if I might, on Page 11.

THE CHAIRMAN: Strike out starting at "The experience" ?

A Yes, strike out beginning with "The experience".

Q To the end of the paragraph on Page 11?

A Yes, page 11, and I would start in there.

It is not proposed to attempt in this report to present any demand curve, by classes of service, or otherwise, for natural gas sold in the City of Calgary. Preparation of such curves would require more data than now appears to be available from the records of the Gas Company. Certain information, however, was obtained from the Company which is believed to have an important bearing on the subject and makes some general observations possible.





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Q MR.HARVIE: Mr.Zinder, was it on account of this information that was not complete or correct that you are omitting to read that paragraph?

A I did not get your question, Mr. Harvie.

Q Was it on account of this statement which is made by Mr.Steer that you are not reading that sentence?

A That is right. If the two classes of customers were not comparable, then the illustration of the principle which I have indicated, the figures would not illustrate it. I would like to see the figures for a uniform classification of customers over the period.

MR. STEER: Mr. Chairman, my learned friend, Mr. Harvie, makes the suggestion that the figures we gave are not correct. I would like the witness to say that the figures we gave him for the years that were given were correct. They become misleading by reason of the fact of the reclassification of customers that occurred.

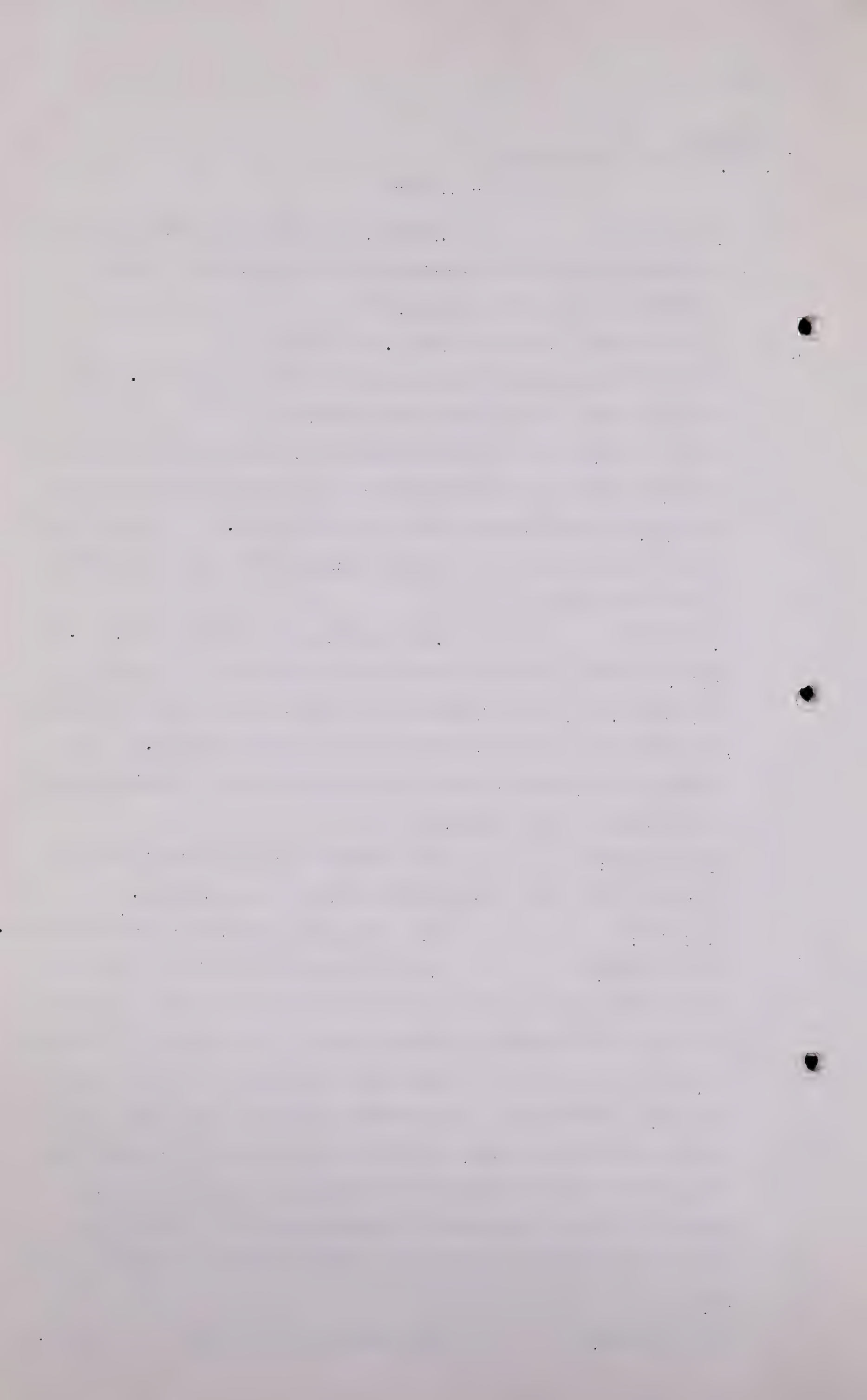
THE CHAIRMAN: The figures are correct but the conclusions which can be drawn from them may be erroneous.

MR. STEER: Yes, by reason of their reclassification.

MR. CHAMBERS: Mr. Chairman, I would like, whether this paragraph is read or not, this exhibit is filed and the witness on the basis of certain figures made certain statements. Now, the application of them may be affected by certain other factors. The thought I had in mind was this, that this information has been prepared, and if there are other factors that do affect them, and this witness does not know about them, it may be to the interests of certain parties or all of us, that somebody else who has the actual information should furnish it.

THE CHAIRMAN: The accurate information, did you say?





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Mr. Chambers?

MR. CHAMBERS: The actual.

THE CHAIRMAN: The actual?

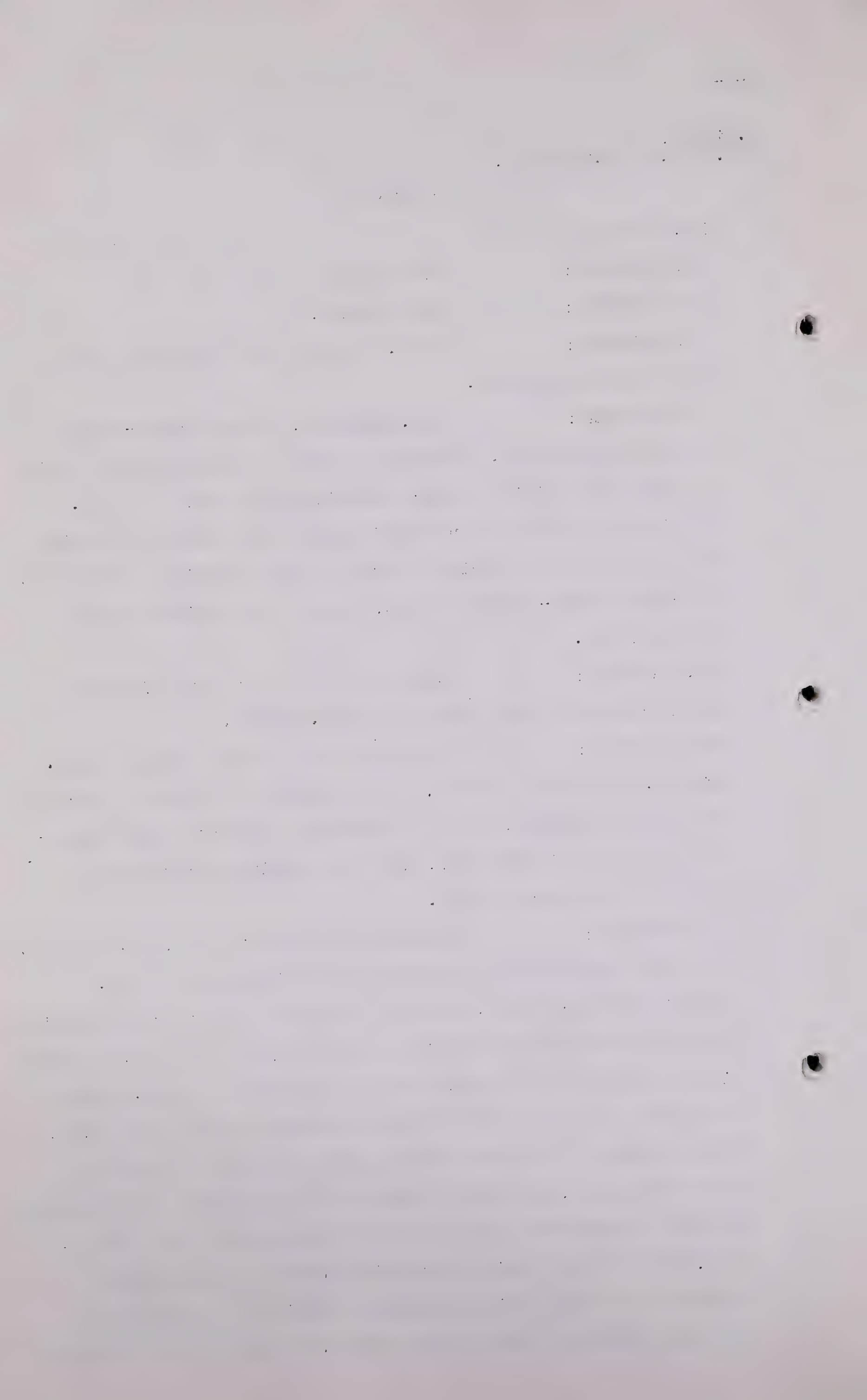
MR. CHAMBERS: Yes. I would like to see the whole thing read personally.

THE CHAIRMAN: Mr. Chambers, you can cross-examine on them if you like. Actually we make a mistake in the filing of these as exhibits before the witness has said a word. It should be filed as an exhibit when he has finished reading and if he wants to strike it out it is his privilege to do it. He can be cross-examined on it, whether he strikes it out or leaves it in.

MR. McDONALD: Maybe we should have an adjournment and I can discuss the matter with Mr. Zinder.

THE CHAIRMAN: I think it is a little unfair to Mr. Zinder. When I say unfair, I do not mean unfair on the part of any counsel present, but he is certainly confronted with something that he did not know, and he is trying to adjust his evidence with regard to it.

MR. McDONALD: I might make myself clear, Mr. Chairman, as to what transpired in obtaining this information. Mr. Brownie may correct me. But when I applied for this information I was told that it was not kept in this type of method. Thinking it over and reading the transcript, I went back to Mr. Brownie and pointed out to him that in his evidence in the years 1929, 1939 and 1944, he had practically given this type of thing in a different way, and I said I thought he had enough information on that to give me at least for the three years as a guide. Now, it may be that since that time there are other figures available, and the evidence would be available to us by noon, the full statement would be available, and maybe this afternoon





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we could deal with this elasticity of demand. That is what I would like to discuss with Mr.Zinder now.

THE CHAIRMAN: All I had in mind is that we have only until Wednesday night to finish his evidence.

MR. McDONALD: Yes,

THE CHAIRMAN: How long do you want?

MR. McDONALD: Oh, just ten minutes, five minutes.

THE CHAIRMAN: Yes, all right.

(At this juncture a short adjournment was taken).

(Go to page 4942.).



T-1-1 10.20 A.M.

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Q I think, Mr. Zinder, if you will go back to page 10. What we have determined is we will complete the report as filed and Mr. Zinder will have available by noon the additional information in regard to the consumption per customer from the gas company and this afternoon he will deal with any changes in his conclusions that he may desire to make.

A On that basis I would like to go back to page 10 and read in the part which I indicated previously was to be deleted. "The experience of the Canadian Western Company between 1929 and 1944 is illustrative of this point. From 1929 to 1944 the overall average consumption per customer increased from 348.52 M.C.F. to 400.48 MCF. (See Appendix II). The conclusion would seem to follow that the average use during this period increased with the reduction in rates. Yet, taking each class of service separately -- Domestic, Commercial and Industrial -- the average use per customer for each class actually decreased in that period."

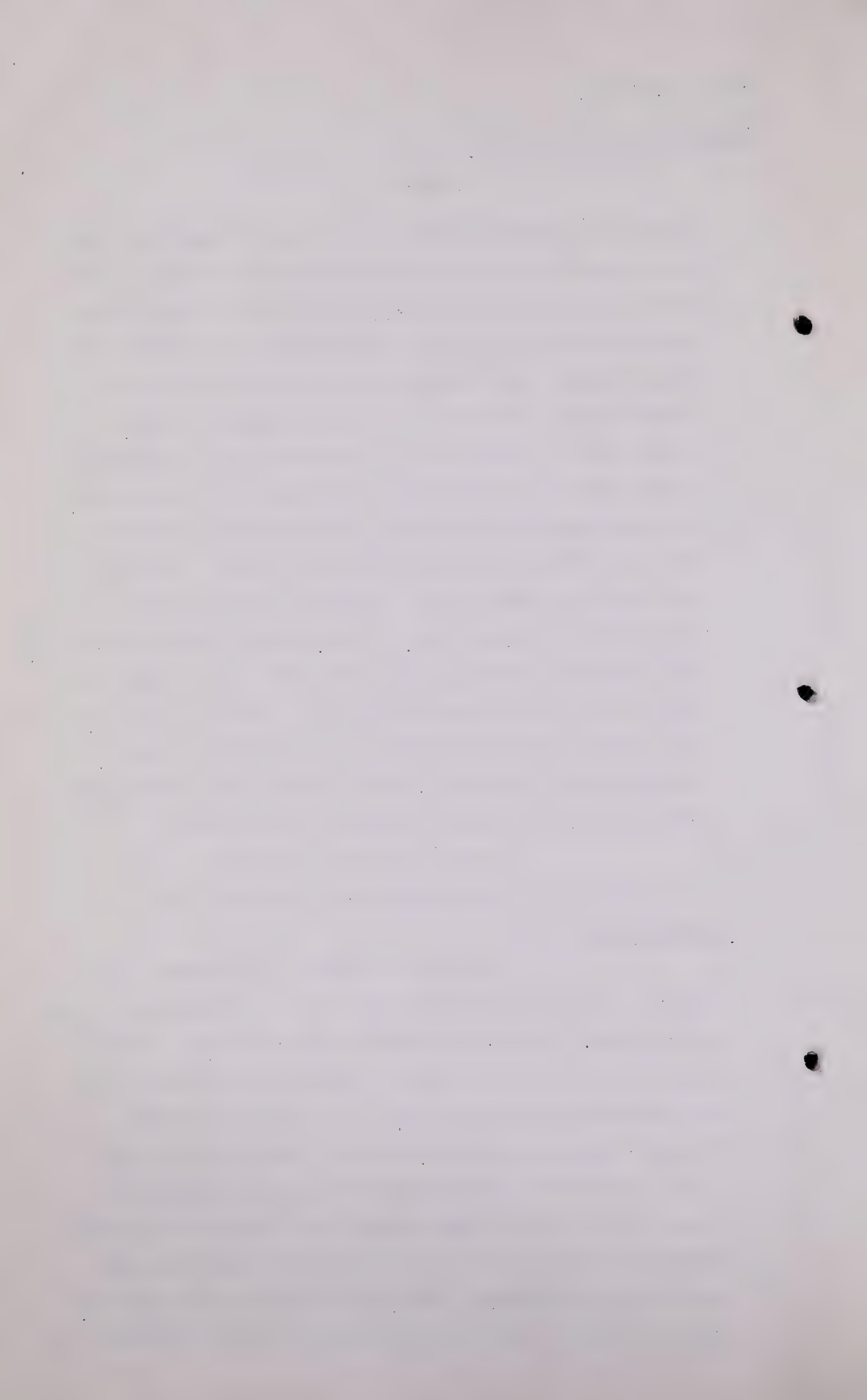
I read the next paragraph.

Starting now with Domestic Use.

#### Domestic Use

In 1929 the average consumption per domestic consumer of Canadian Western was 218.51 MCF, and the rate for most domestic use was 33 cents per MCF. At that point, I would like to refer to Appendix III, which is the new Appendix for these figures. In 1944 the average domestic sales were only 191.48 even though the rate had been decreased to approximately 25 cents, a decrease of almost 25 per cent. During this period there was a slight increase in the per cent of total domestic customers who were heating customers, from 87.6 per cent to 90.8 per cent. This is shown on the following Schedule No. 1. In Part I of





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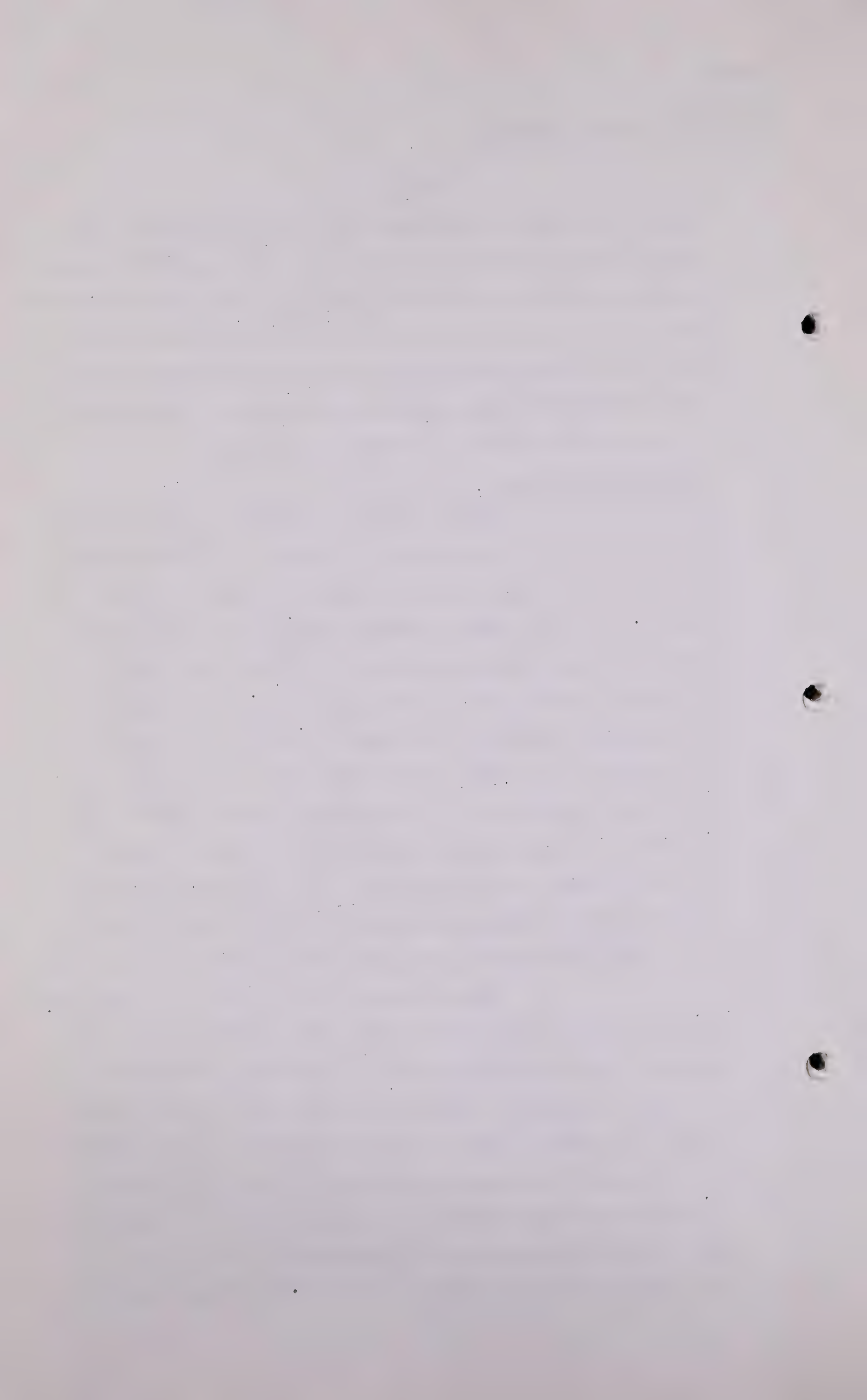
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of this Submission it was shown that the present price for gas for domestic heating is well below the competitive level as measured by coal as a substitute. All these factors clearly indicate that it would take a very substantial increase in the price of gas to this class of customer to affect the use to any material extent, so that an increase in price could be expected to produce an increase in revenue.

Commercial Service.

There has been a material change in this class of customer over the past 15 years. In 1929 Canadian Western had 238 commercial customers, who used an average of 4,791.81 MCF. By 1939 the number increased to 3118 and the average use per customer declined to 674.55 MCF. There was no change in rate during this period. By 1944 the number of commercial customers increased to 3368 and the average use increased to 1,164.28 MCF. How much of this increase in average use was due to war activity and how much to the reduction in rates is not possible to determine. During this same period -- 1939 to 1944 -- the company added only 300 commercial heating customers or approximately 10 per cent of the total commercial customers already served in 1939.

The commercial classification of customers is probably a heterogeneous group, since in many cases it includes small industrial users. The demand behaviour of gas for restaurants, hotels, laundries, and such establishments will differ from its use in heating of stores, office and apartment buildings. In the first group the principal factor influencing use once gas is adopted as the fuel, is the volume of business carried on by the establishment. In the second group the principal factor influencing demand is





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the degree day deficiency. In both groups, once the price of gas is fixed below competitive levels of alternatives, price becomes a secondary factor in influencing use. In Part I of this Submission it was shown that for this class of service present prices of gas in Calgary are sufficiently below competitive levels so that it would require a substantial change in price to cause any material change in use.

#### Industrial Use

The industrial classification is likewise not usually a homogeneous group with respect to the demand characteristics for natural gas. Gas is used both for direct firing and for processing and heat treating, as well as for other uses in the industrial classification. In its fuel use gas would be competitive with other fuels, and in such use the relationship of the price of gas to industrial customers in Calgary as compared with coal has been set forth in Part I of this Submission. In processing, heat treating and other such operations, coal is really not competitive with gas.

There is one basic demand factor which is common to all industrial use. In a large measure, the industrial use of gas is in turn largely determined by the demand for the products processed by the industrial user. Thus the industrial use of gas will vary with the business cycle to a substantial extent.

In 1929 Canadian Western had 40 customers which were classed as industrial, whose average annual use was 34,684.55 MCF. The rate for this service was the same rate as for all other service starting with a top block of 33 cents per MCF and going down to 15 cents per MCF for all uses in excess of 5,000 MCF per month. Under this rate, by



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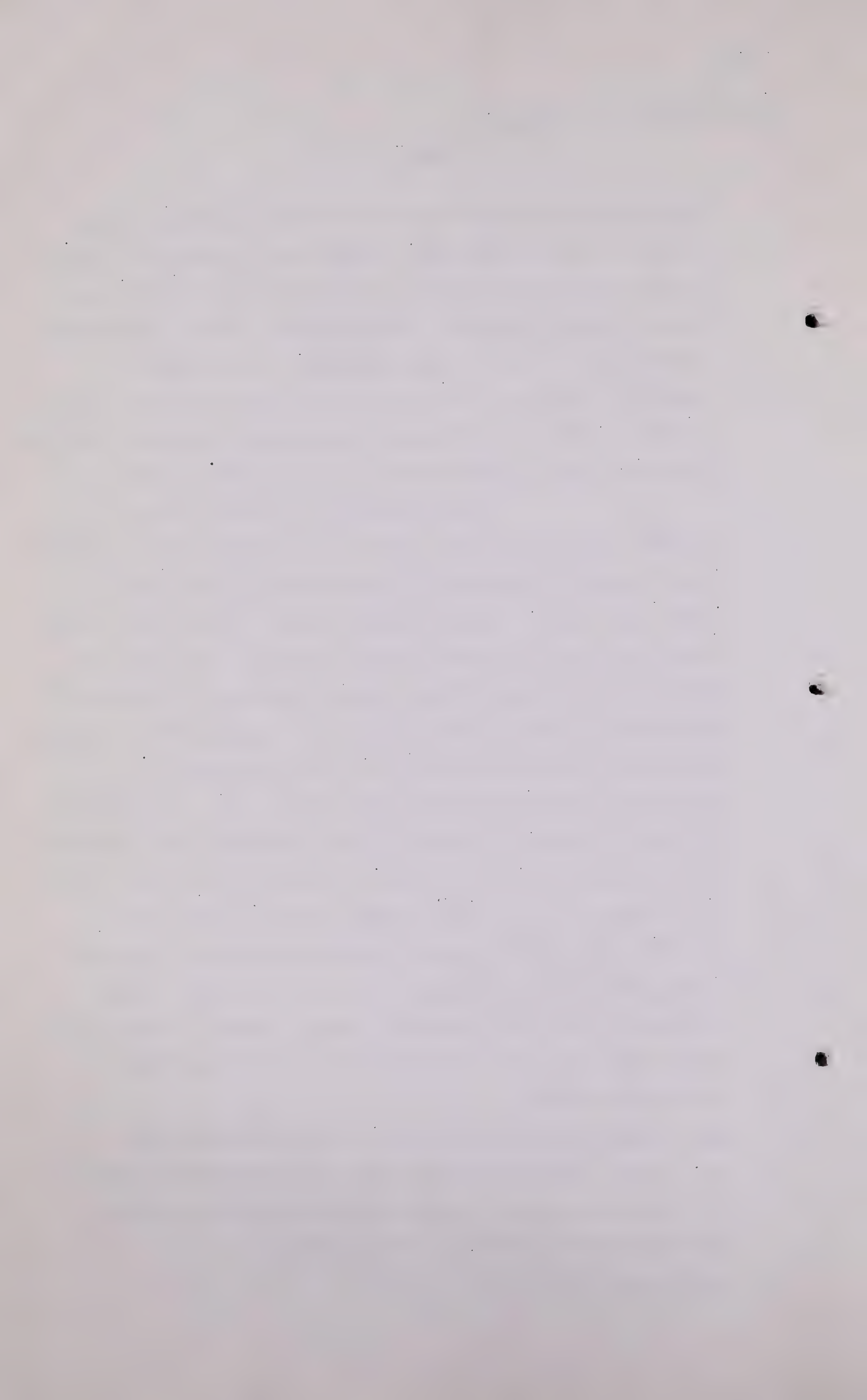
1939 the company reported 133 industrial consumers, whose average use was 8,035.69 MCF. Commencing December 12, 1939, Canadian Western established a number of special rates, including special commercial and industrial rates, representing a reduction in rates to many consumers. The number of industrial customers declined from the 133 in 1939 to a low of 124 in 1943, and by 1944 the company reported 130 industrial customers, whose average annual use was 18,748.63 MCF.

In the fuel use of natural gas by industrial customers will probably be found the most sensitive relationship of any group of gas customers to the cost of competitive fuels. Some companies after establishing a base price for service to such customers provide for either an increase or decrease in this price, depending upon increases or decreases in the prevailing prices of competitive fuels in the area. Reference to Chart No. 3 of Submission No. 1, indicates that except for average monthly use, around 600 to 800 MCF per month, the price of gas in Calgary for industrial use is below competitive levels. This is particularly true with respect to the larger monthly volumes. This would indicate that for the smaller monthly consumption, no price change could be made increasing the price of gas without influencing the total volume of sales, whereas for the larger volume there is a margin between the price of gas and competitive levels.

Q Mr. Zinder, referring to Part I. You might point out, Mr. Zinder, on page 14 at the top, with reference to Chart 3 of Submission Number 1, you refer or the reference is to Chart 3 of Part number I of this submission.

A What page is that?





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Q Page 14.

A Yes.

Q Submission Number 1 or Part Number I of this Submission?

A Yes.

Q That should be Part Number I of this Submission?

A Yes.

MR. CHAMBERS: That is the third graph.

A Yes. It should be Chart Number 3 of Submission Number 2.  
It refers to the graph labelled "Competitive Relationships  
Coal vs. Gas industrial use, City of Calgary."

Q MR. McDONALD: In this submission?

A In this submission, yes.

Q With regard to the value of natural gas, can you express  
an opinion as to the price which gas could be raised to  
before it is competitive with coal in each classification?

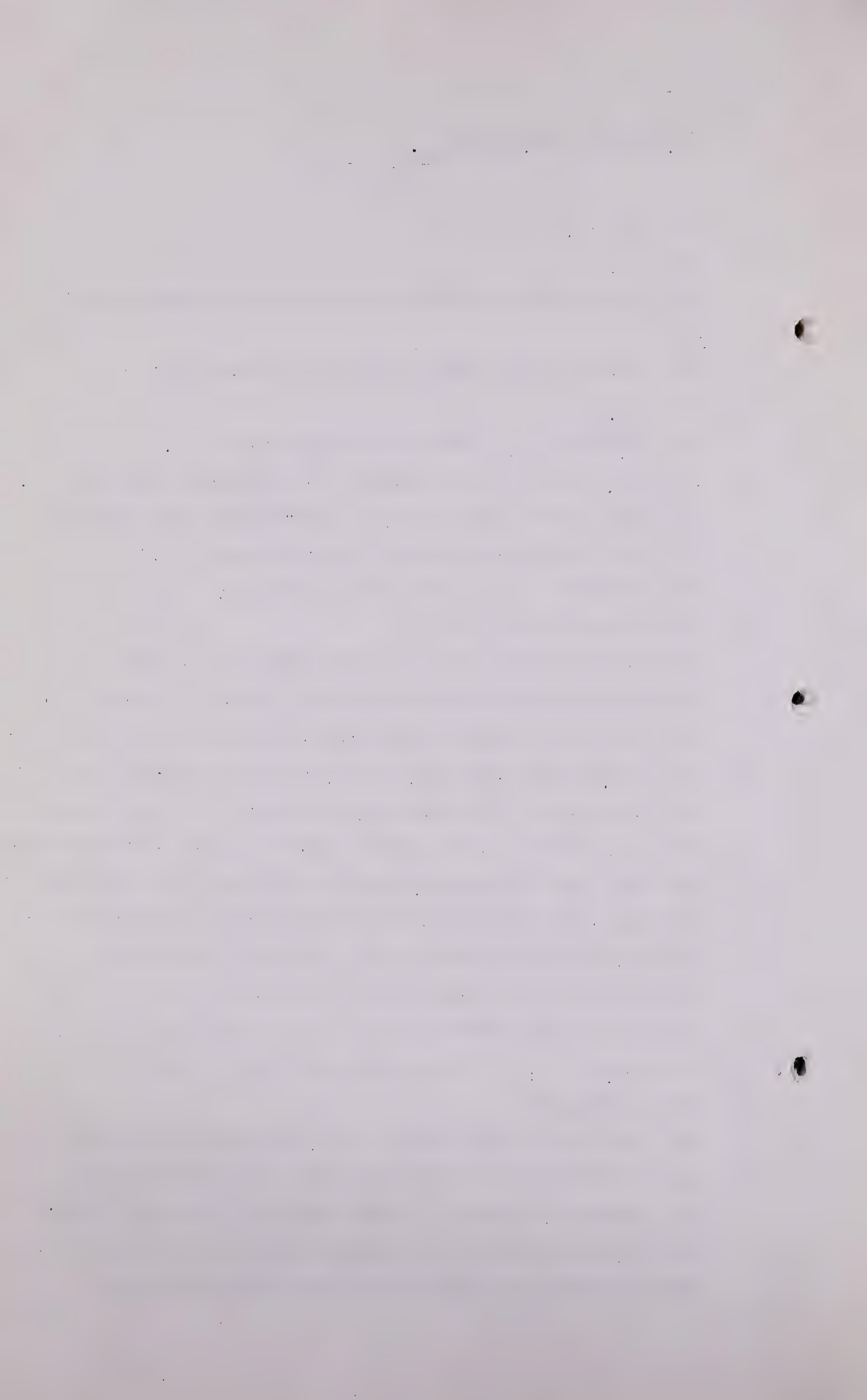
A Yes. Based upon this study, it would be my opinion that  
the price of gas for domestic use might be increased to as  
much as 33 cents or even higher without appreciably affecting  
the total use of gas, particularly for heating for domestic  
service. For commercial use, my opinion would be that the  
price might be increased to that level or perhaps a bit  
higher and with the same expected conclusion, that the total  
volume of use per customer would not vary materially.

Q MR. STEER: By that level you mean 33 cents?

A How is that, sir?

Q When you said "to that level", did you mean that 33 cents?

A Yes. With regard to industrial use, I do not know that I  
can express an opinion. I think that would require a little  
more detailed study of this classification of customers. My  
general conclusion would be that some increase would be





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possible and that is based, as I stated here, largely on the relationship of Rate Number 4, which is shown on Chart No. 3. and when the price of coal is competitive, the price of coal on an equivalent basis adjusted for efficiency. How much and at what point of use the rate may be increased to this class of customer without affecting consumption, I am not prepared to say.

MR. CHAMBERS: Is my learned friend going to have the witness deal with the Appendices?

MR. McDONALD: The Appendices are just referred to for data. We will revise Appendix III.

THE CHAIRMAN: Is that all, Mr. McDonald?

Mr. McDONALD: That is all I have on this phase, Mr. Chairman.

MR. STEER: What other phase is there?

MR. McDONALD: There were the questions Mr. Blanchard asked Mr. Zinder.

MR. STEER: Oh yes.

MR. McDONALD: That is the only other thing.

THE CHAIRMAN: And what other evidence Mr. Zinder wishes to give as the result of the information we are getting today.

MR. McDONALD: Yes.

MR. STEER: I would not like him to break it up into two or three parts, sir. My suggestion there was practically that Mr. Zinder should give his evidence and then be cross-examined and we will get along more expeditiously.

MR. McDONALD: There are two elements. There are really two elements in this submission. There is first the value of the gas and second the elasticity of demand.

THE CHAIRMAN: That is right.



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MR. McDONALD? The cross-examination this morning will be restricted to the question of the value of the gas and we will deal with elasticity this afternoon.

MR. FENERTY: I can go on with my end, that I am going to take, leaving the other matters to my friends when this other analysis has been made.

THE CHAIRMAN: Yes.

.....

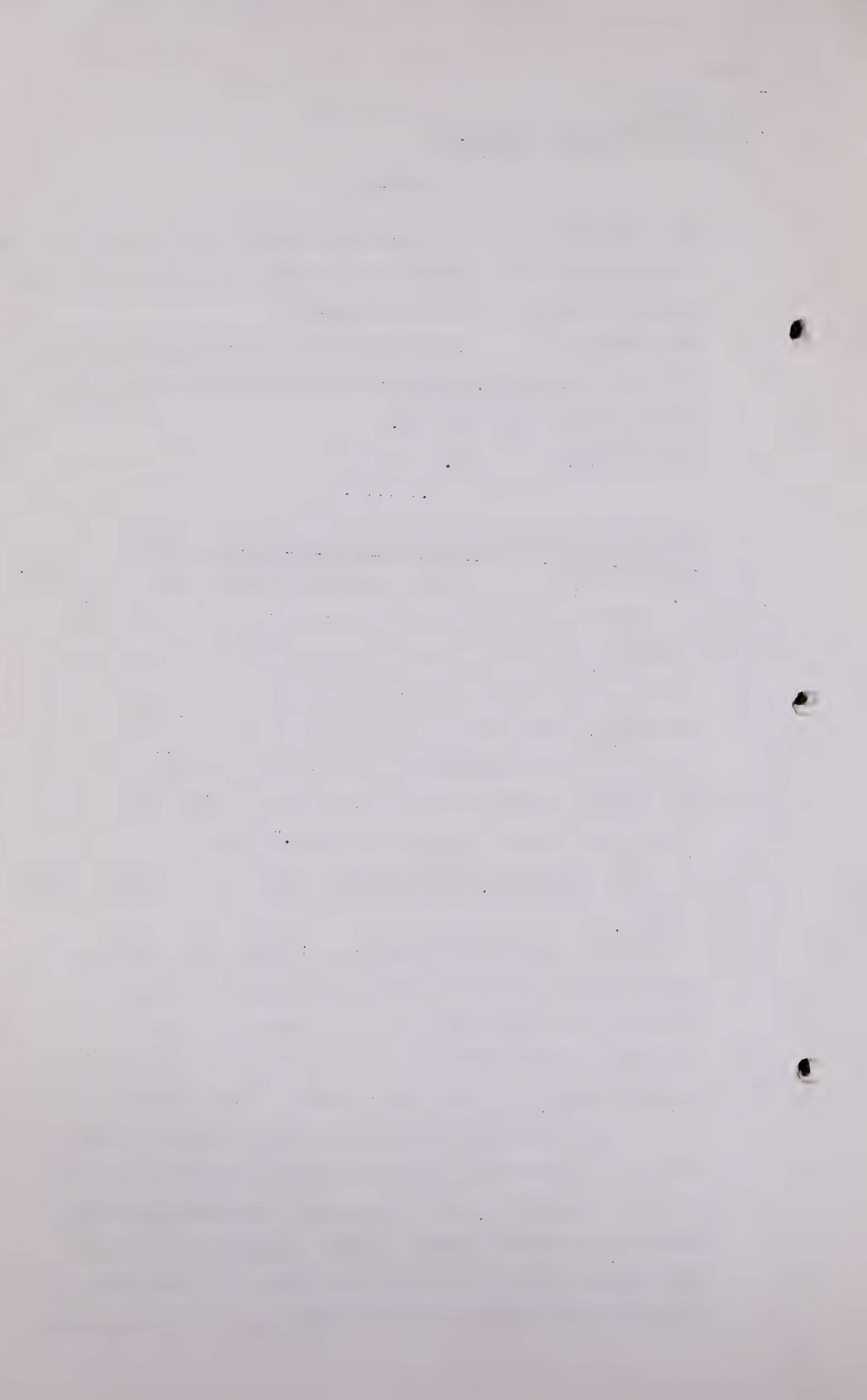
CROSS-EXAMINATION OF THE SAME WITNESS BY MR. FENERTY.

Q MR. FENERTY: If that suits the convenience of everyone, Mr. Zinder, would you turn to your introduction, the third paragraph. I do not want you to read it all, but you have outlined some of the difficulties that are encountered in ascertaining the value of gas at the well and in the last sentence of that paragraph you say: "The composite of all these values as they exist in the market served would give a composite value of gas at the well." Now we have not got all those, have we, those elements before you in determining values.

A We have the value for domestic use; we have the value for commercial and industrial use and the value for large industrial use. How they would go together to make a composite, we have not the information to do that, no.

Q "Furthermore, the value of gas service to an existing consumer is different from the value to a consumer, making the choice between gas and some alternative for an entirely new home or plant." And in discussing the industrial consumer, "an entirely different value at the well would be obtained if the value to the large industrial consumer of natural gas for processing, heat-treating, or other purposes





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is taken as a base." That alters the picture?

A Yes.

Q Have you got an analyses of all these things, uses, individual uses by industrial consumers and the number of new houses and how they would compare to the old ones and the habits of those customers that you speak of?

A No, I have not.

Q You have not got all those?

A No.

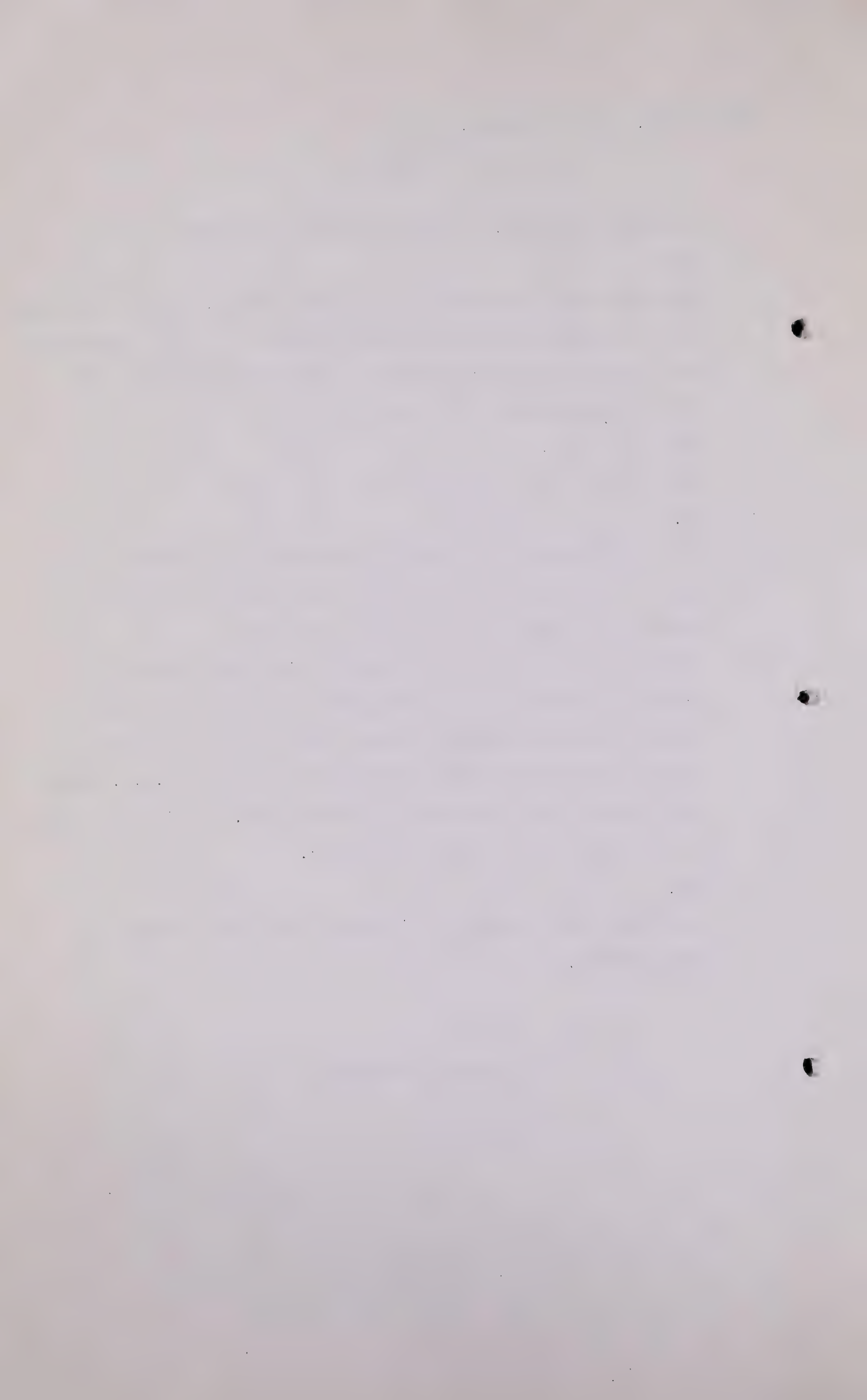
Q So it follows that if they are essential in determining the value at the well, you have not got all the features with which to determine those values, have you?

A Not in arriving at, let us say, the final, let us call it accurate figures. I have taken the one factor, namely the competitive relationship between gas as a fuel and coal as a fuel and compared them and compared them on a B.T.U. basis and adjusted for differences in efficiency. I will say that is probably the predominating factor.

Q Yes.

A And these other factors do influence use but this one is a major factor.

(Go to page 4950)





C-2-1 10.35 a.m.

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Q Not to the same extent on the factors you have?

A Not nearly to the same extent, particularly in the domestic and commercial classification.

Q Now I am going to come back to this point I am speaking about in a moment, but I want to get the general picture from you. It is true, of course, is it not, that one of the controlling factors in this matter of competitive fuels, is the respective efficiencies of gas and coal as fuel, as used in existing appliances or appliances which are available?

A It has an important bearing on the result, yes.

Q Yes, well we will take it this way, you have discussed efficiencies based on figures, some cases 50%, some 55%, some 65%, 75% and so forth. Now it so happens that these efficiencies, these figures, if these figures should be modified so that the efficiencies are equal, or even that coal was more efficient, it would change the entire situation, would it not?

A Yes, if you changed your efficiencies it would change your curves up and down.

Q As I understand the situation, you do not know what the relative efficiencies under these conditions that exist here are, you have taken figures from a submission filed by the Gas Company?

A That is right.

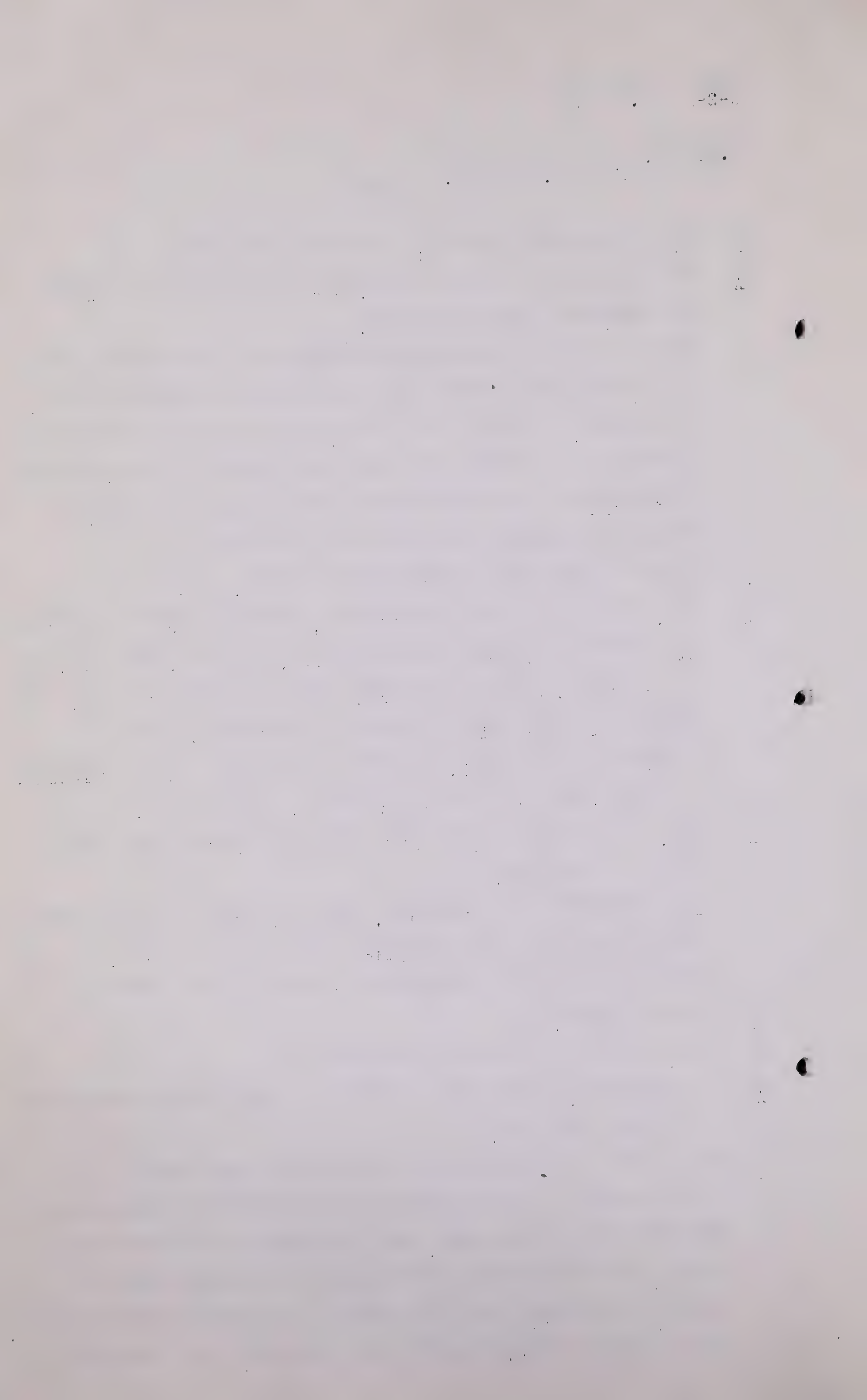
Q Yes, but you do not know what they are?

A No, no tests, I have made no tests of individual consumers in the City of Calgary.

Q And I take it you do not know anybody who does know?

A I was not able to find anybody who had made tests in Calgary.

Q Speaking in general terms, and I am coming to it particularly later, is it fair to say that in such cases where there are definite figures, they tend towards a reversal of these figures, with a higher efficiency for coal than gas, where there are



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any?

A No sir, not in my experience.

Q You do not know?

A Or my observation.

Q So I say, any such figures having to do with gas and the position of this gas and the coals which we have in Alberta, do you know anything about that?

A We have one studied.....

Q I am going to ask you in detail later, but I want to know whether or not you know of figures which tend generally to reverse those?

A To reverse the situation?

Q Yes?

A No, I do not.

Q Then I will come to the other later.

Leaving that now and going to Page 2, the last paragraph:

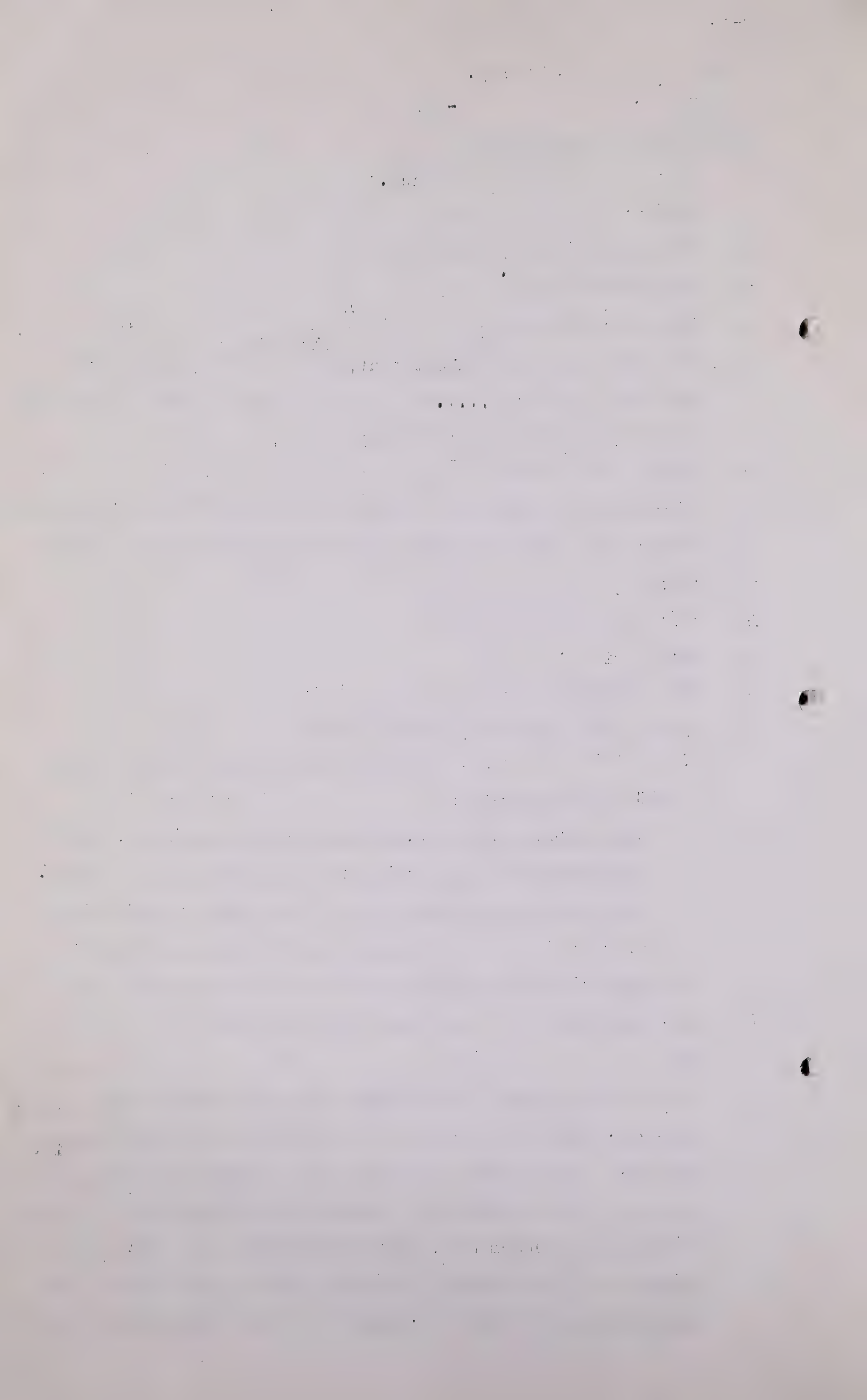
"Such loss as might occur would be in conservation of use by some instances, perhaps only temporarily, rather than any changing over by any customers to use of coal."

I just want to discuss this with you before I forget it, that has to do to some extent with the elasticity you have been speaking about?

A Yes.

Q Would it be helpful in obtaining an impression of the situation here if you were to ascertain that in the City of Edmonton, for instance, that gas had a higher rate than here at present, many customers or a number of customers made a point of using gas through the summer and spring and fall, and going to all the trouble of ripping out the gas burners and using coal in the winter, during the large consumption, did





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you ever hear of that happening?

A I have not.

Q What?

A I have not. I have made no study of the Edmonton situation as to the price of coal there or as to the price of gas.

Q But if we have a situation in this Province, or in any community where such a practice has prevailed with certain prices, would it affect your ideas as to how much the traffic will stand, or whether people will go to any trouble to save money?

A If I found a situation in Edmonton last year substantially identical with what I find for Calgary as to the relationship between coal and gas, I would say it would, but I do not know that the situations are identical.

Q I was not speaking of the coal value. I am speaking of the idea we got from your report that you thought that people would go a long way to continue under existing conditions in burning gas, did you not have some such idea as that?

A No, what I am trying to say here, Mr.Fenerty, or that I thought I said, was that if my price of gas is 25 cents per MCF and if I know that if I changed to coal it would cost me, let us say, 35 cents.....

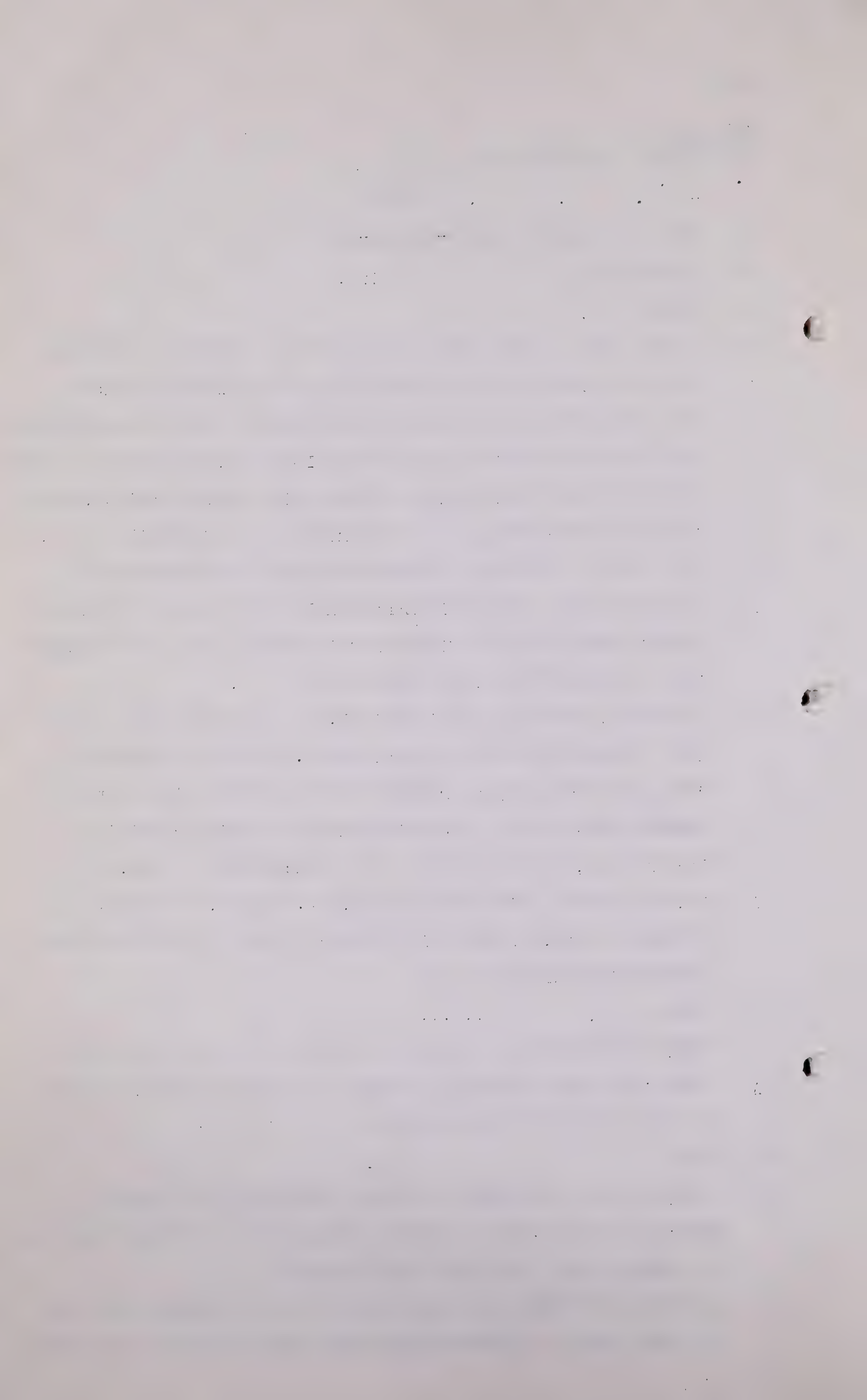
Q Yes?

A Then if the price of gas were increased to 30 cents, that I would not change to coal or would not likely change to coal. Now that is all I tried to say.

Q Yes?

A I might try to conserve a bit and that might be temporary because you get tired of going through all the motions necessary. It depends upon how much was involved.

Q I am not directing this question to that particular phase of it, but just as a general suggestion that you give in the last





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part of that paragraph:

"Such loss as might occur would be in conservation of use by some instances, perhaps only temporarily, rather than any changing over by any customers to use of coal."

Now I suggest to you that that is not the history in every place, that customers do change over to use of coal if it is going to affect them to the slightest degree; you did not anticipate there could be such a situation as that, did you?

A Oh, I could anticipate a situation of customers changing over to coal, Mr. Fenerty, but only, I would say at such time as the price of coal becomes cheaper than gas, and it would have to be, in my opinion, enough below the price of gas on a competitive heating value basis, to offset the other advantages.

Q I see?

A The other advantages of gas.

Q Now will you turn to Page 6. I note that you have eliminated the sales tax because you anticipate that that form of taxation may disappear?

A That is right.

Q Now in another part of your report you refer to taking the ceiling prices for coal, because, of course, that is the present condition?

A Yes. I was told the prices, it was my understanding at which coal is sold in Calgary.

Q And if we have a reduction for instance in the price of coal at some time in the future, that would have as much effect, and possibly more effect, than the elimination of the sales tax, just depending on what takes place?

A Certainly.

Q So that I suggest to you that any report can only be of value

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H.Zinder,  
Cross-Exam.by Mr.Fenerty.

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if it deals with the facts as they exist, because neither you nor I nor anybody else knows what these facts will be in the future, what do you think about that? I mean you did not anticipate a reduction or an increase in coal prices, you just anticipated one thing, and it is just one factor which presently exists, which you eliminated, the sales tax, and it is the only factor which is presently existent which you did not deal with.

A I can only say, Mr. Fenerty, that I called attention to what I had done and the 8% variation can very easily be made there.

Q But as a result of the discussions, you formed, you thought the 8% sales tax would be eliminated, that is your reason for leaving it out?

A That is what I thought.

Q Yes, but do you not think now you should not anticipate the future, either a decrease or an increase in the price of coal the elimination of taxes or any other matters not presently assured, would that not be fairer?

A Well I think it is fairer to do it as I did, the way I presented it.

Q It is fair if the sales tax is eliminated, it is grossly unfair if it is not, is that not the answer?

A It is fair if the sales tax is eliminated.

Q Yes?

A And if it is not, the statement is made there that there is an 8% difference in the rate in that reduction and it can readily be made.

Q Well it is unfair to use those figures if the sales tax is not eliminated?

A I say I do not think so as I call attention to the thing as it is. You are asking me to say that it is unfair?





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Q Yes?

A I do not think so.

Q I say that you have used figures in anticipation of a change in conditions favourable to gas in the future?

A Yes.

Q That is right, is it not?

A Well.....

Q That is right I say, is it not?

A Well that factor is favourable to gas.

Q It is favourable to gas, is it not?

A Yes.

Q And you have not used any figures favourable to coal?

A No. My own feeling would be that if I tried to interfere with, - due to the information I have, it would be a tendency for the prices to go up.

Q And it would not be fair to use these?

A I have not done that.

Q It would not be right to base it on your expectation of what happens to coal, would it?

A If there was.....

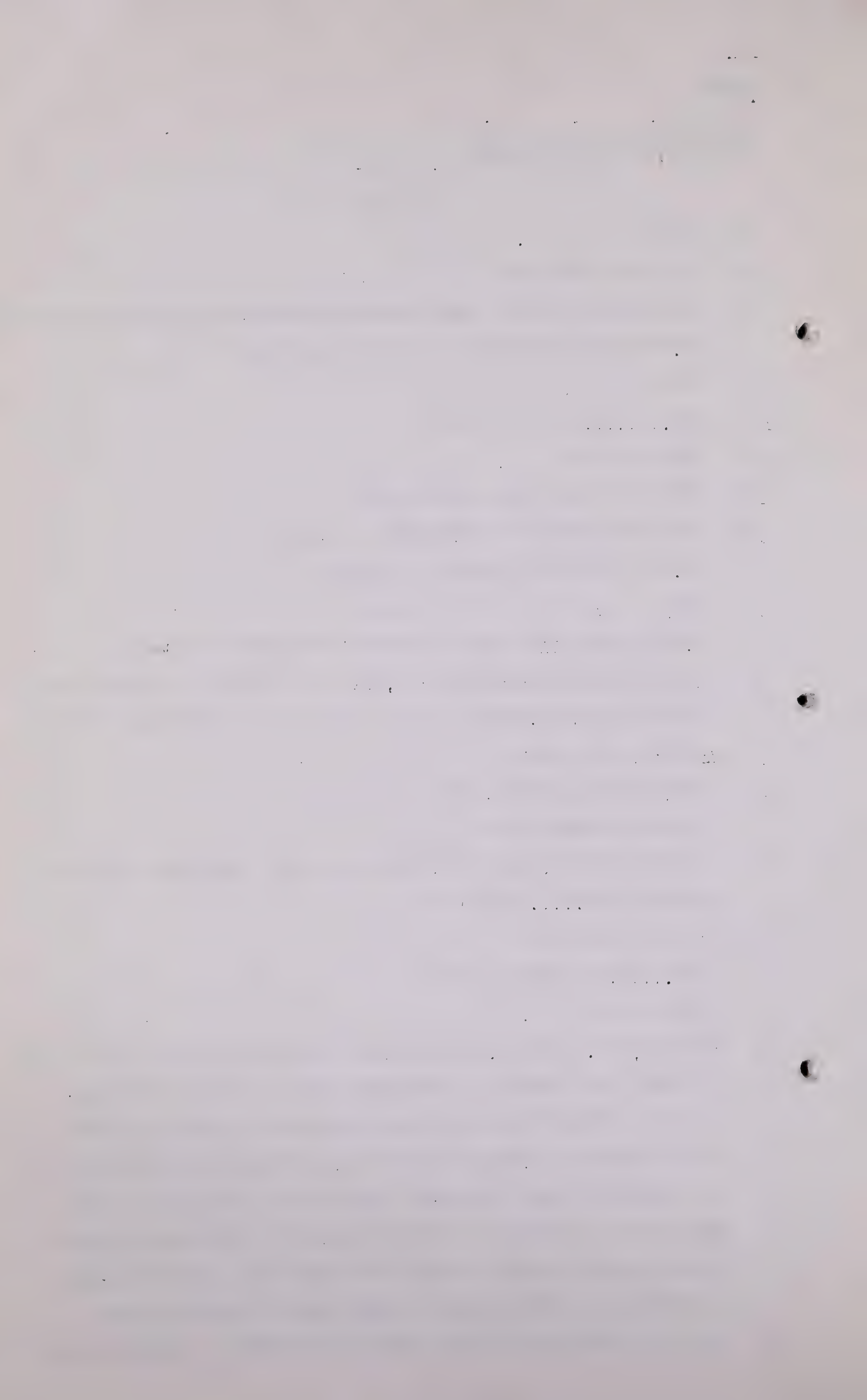
Q Will you not answer that?

A Well.....

Q Either up or down, it would not be fair to use them, would it?

A I think, Mr. Fenerty, I can answer that question this way, that if a comparable situation exists with respect to coal, that I would be unfair if I had not treated it the same way as I have for gas. In other words, that if there has been a tax or had been a tax on coal in effect at the present time which general opinion seemed to be would be eliminated soon, I would have treated coal the same way as I did the gas.

Q In other words you say you would be justified in substituting





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your opinion as to the trend in the future, that is, your opinion is it not?

A That is right.

Q Yes, only where it results in a comparison favourable to gas; now that is what you are telling me, is it not?

A I did not tell you that, Mr. Fenerty. I think I said if a comparable situation existed with respect to the price of coal, I would have handled it the same way.

Q You have said you are being fair to coal in taking the present selling prices because you think they will go up, I take it, that is your opinion?

A That is my opinion.

Q Why did you take the present selling prices, - because they existed?

A Yes, they are the coal prices set by the Wartime Prices and Trade Board.

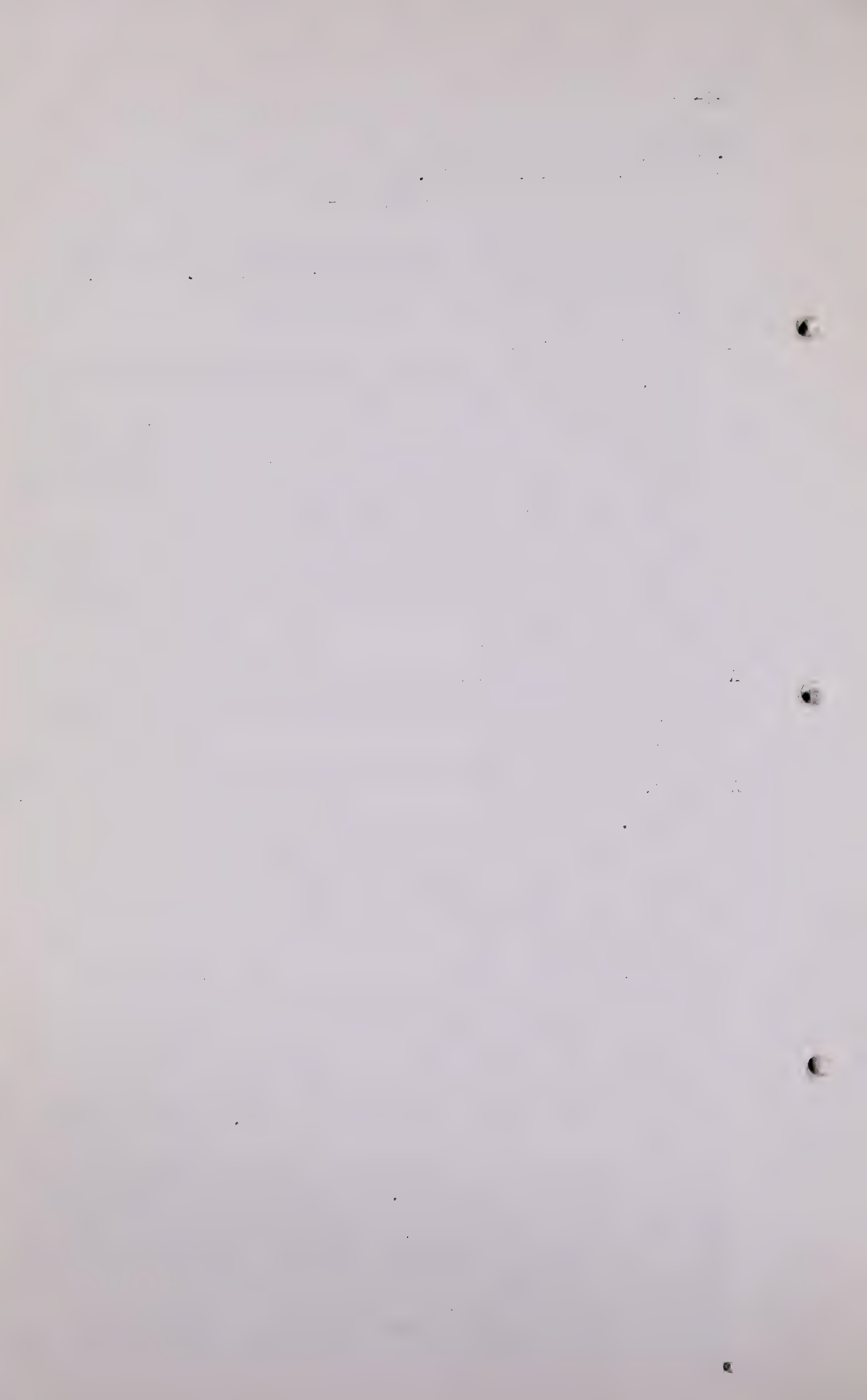
Q But you expect those ceilings to be removed?

A I assume they will be removed some day.

Q But you take them and you say you can only take them as they exist, is that not also so with your taxes, - I am just wondering how wise you are, and what you know about this Dominion Government taking off taxes; some of us have had experiences with taxes and we know how difficult it is to get them off once they have got on, - however, you feel that is right?

A I would suggest to you, Mr. Fenerty, that if you want to make allowance for that factor, you would have to add 8% to the price of gas where it comes in, and I have indicated the amount in what has been done.

Q Now as a matter of fact you know that in the general, the average



H.Zinder,  
Cross-Exam.by Mr.Fenerty

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price for coal in the States is substantially that of prices of coal in Calgary?

A The price of coal in the States, Mr. Fenerty, is not a single price. It varies over the entire States between very wide limits, so as to the relationship of the price of coal in Calgary to the price of coal in the States, I cannot say.

Q You do not know?

A No.

Q We will perhaps refer to it a little later but I was wondering whether you had given any thought to the future prices of coal in Alberta, - I was wondering if you are aware that there is a large body of people who have formed the opinion, of the coal operators, that there might be a decrease, did you ever hear that?

A There might be?

Q A decrease in the price of coal, have you ever heard of that?

A I have not heard of that.

Q You do not know anything about the situation as disclosed to our Coal Commission, as to Western Canada, you have not inquired into that?

A No.

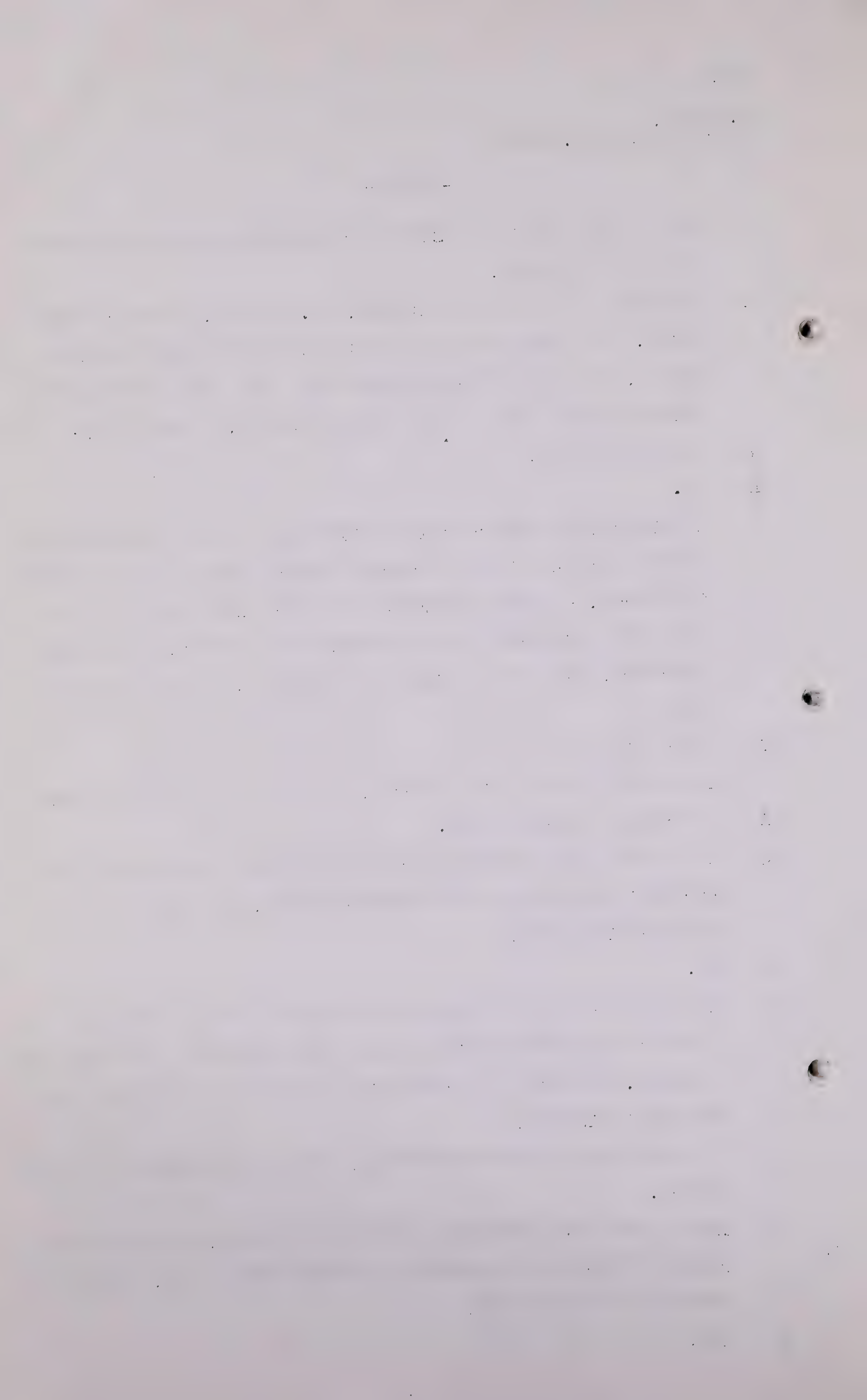
Q And you do not know whether or not there is any, - whether there are any substantial grounds with increased mechanization of mines, following the conclusion of the war, and drives for markets in Alberta?

A I do not know of any specifically, I had no information of that nature.

Q And if some such conditions as those did exist, it might have a serious effect on the question of competitive fuels, coal as a competitive fuel to gas?

A Yes.





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Q Yes, did you say yes?

A Yes.

Q And the time for that drive, of course, would be if there was an increase in the price of gas, would it not?

A Not necessarily, but I would think they might make that drive at any time and I assume that anything that tends for lower costs would affect it.

Q And the time to make it effective would be when there was an increase in the price of gas, - the greater opportunity for making it effective would be then?

A That might be an added incentive to try to do something.

Q Yes, so you really have not studied any of those questions which might determine whether an increase might upset the present value entirely, except the value of gas in relation to the price of coal as it exists today, that is your entire basis?

A That is right.

Q Now on page 3, Mr. Zinder, I am jumping around a little bit, but it is the way I took my notes, - I notice that in giving figures here you have selected Drumheller, Priddis and Blairmore Coals?

A Yes.

Q And you have chosen to use the more expensive and in some cases the medium priced coal, I mean based on the higher quality of lump and nut and so forth, and you have given no consideration for instance to Canmore Stoker or Lethbridge coal, have you?

A Well, as to.....

Q First of all I want to get at it, you have not given any consideration to those coals?

A No.

THE CHAIRMAN: Are they available, is Canmore coal





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available to Calgary?

MR. FENERTY: Canmore coal?

THE CHAIRMAN: Canmore coal?

MR. FENERTY: Yes, Canmore stoker coal. We have, we expect to have a whole lot of it available. I have quotations on it in Calgary, right here.

MR.CHAMBERS: I assume that some witness is going to prove that, instead of just a statement by counsel.

MR. FENERTY: Just on that point, if the Board would like to know.....

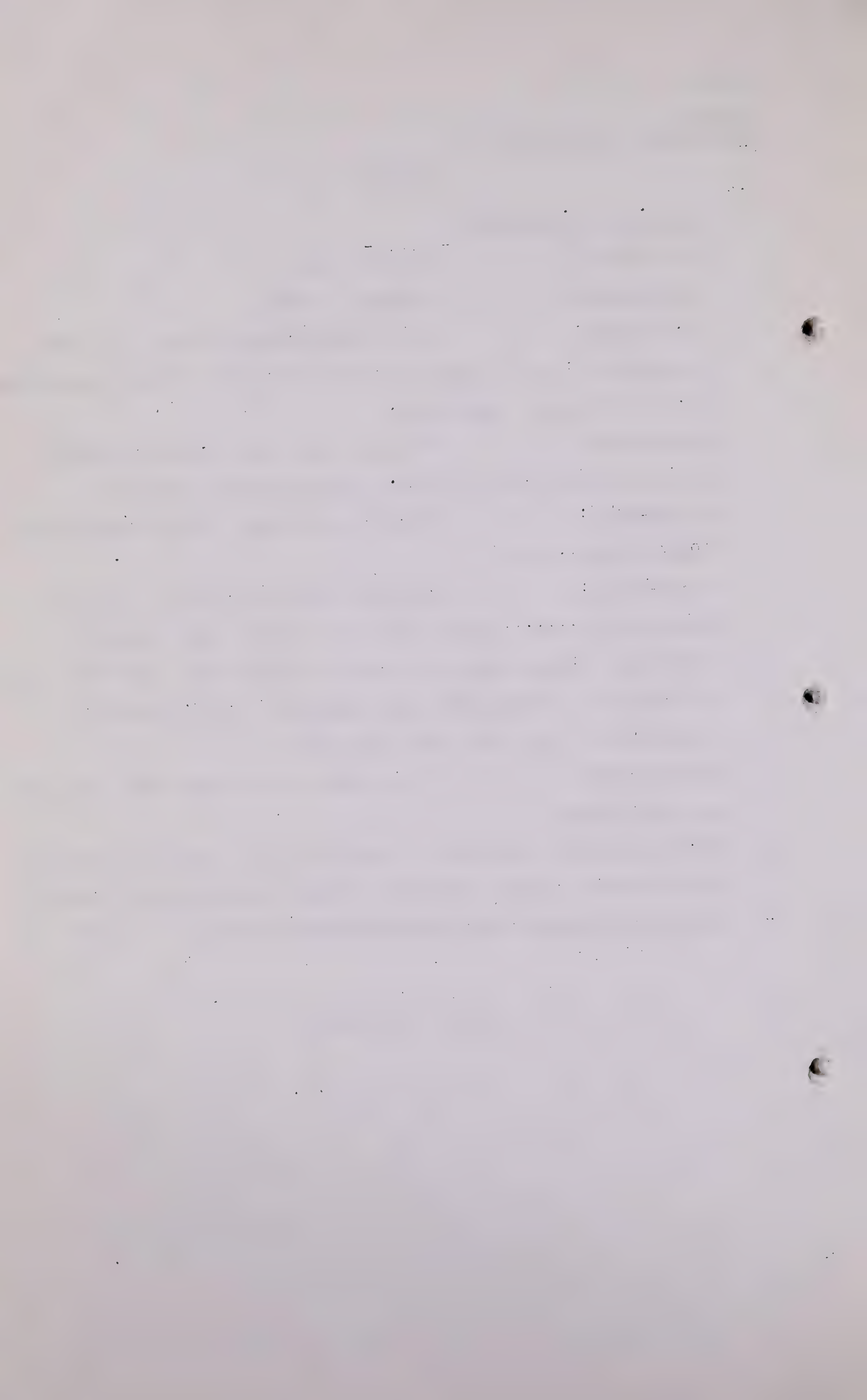
Q THE CHAIRMAN: We can resolve it this way, did you consider any other coals except these three, Mr. Zinder?

A I did not, because from the inquiries which were made those were the available coals which were being used in this market or available to this market and being used.

Q MR.BLANCHARD: Do you mean the cheapest coal available to this market?

A Well I took all those that I found available and that would be representative of the coal used in this market for the various classes of service that I have indicated here.

(Go to page 4960.).



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Q Just on that point I might indicate to the witness one of these coals. In answer to your Chairman's remarks as to whether it was available I have here a letter from the Secretary of the Western Canada Bituminous Coal Operators Association.

MR. CHAMBERS: I do submit that if you are going to put in evidence from the Western Canada Coal Operators Association you should put it in so that we may cross-examine on it.

MR. FENERTY: I am going to cross-examine Mr. Zinder because he has put in a lot of prices without calling evidence.

THE CHAIRMAN: You did not object when he was doing it. I am getting tired of this. The witness has stated that he did not consider any other coal. Why bother any more.

MR. FENERTY: Because this other coal could have been brought.

THE CHAIRMAN: Then bring that evidence. This witness says, I did not consider any other coal, than Priddis, Drumheller and Blairmore.

MR. FENERTY: Then I am going to make him consider it.

THE CHAIRMAN: He does not know so how will you make him consider it.

MR. FENERTY: I am going to try to show that unless he considers other coals which are relevant to showing efficiency this thing is of no value.

THE CHAIRMAN: You wasted fifteen minutes this morning with this witness right at the beginning.

MR. FENERTY: I am sorry that I wasted it. It could be that when the Board comes to an appreciation of this information it may not have been wasted.

THE CHAIRMAN: I know the rest of it was. There is no use badgering the witness and that is what you are doing.





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MR. FENERTY: Would you prefer me to adjourn this to some time when you feel I might take it the way you feel I should ?

THE CHAIRMAN: I won't adjourn it.

MR. FENERTY: My cross-examination. I did not mean the whole thing.

THE CHAIRMAN: No.

MR. FENERTY: Because I may say that I have spent a good deal of time mapping out what this cross-examination should be and I may be wrong but that is my opinion that this is what it should be and I am not prepared to discuss competitive fuels only on the most favourable ones and I won't do it. I may as well be plain.

THE CHAIRMAN: He has told you he has only considered three types of fuel.

MR. FENERTY: Yes, I have asked him that. Then I asked about Canmore coal and the Board said is it available and I said yes. I will give you the evidence that it is available and Mr. Chambers objected and said that I should call the Western Canada Coal Operators and I say we did not call them to prove these other features.

THE CHAIRMAN: Quite properly and I say you did not object when the witness gave that evidence.

MR. FENERTY: You think it is a case of objecting ?

THE CHAIRMAN: I say you did not object when the witness gave the evidence. Will you please go on with your cross-examination.

MR. FENERTY: Before I go on, do I understand from now on, it is a case of everything that anybody says must be proved by original evidence and nothing we get from anybody





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else goes. We will have some inquiry. You are now telling me I did not object to this.

THE CHAIRMAN: I have asked you to go on with your cross-examination. Will you please do it ?

MR. FENERTY: I am not sure.

THE CHAIRMAN: Please yourself. If you are through I am satisfied.

MR. FENERTY: I am going to ask the Board and the Board can tell me if they refuse to answer, the basis on which this inquiry is going.

THE CHAIRMAN: Now Mr. Fenerty I am not going to discuss it with you. Will you please go on with your cross-examination.

MR. FENERTY: I understand that you will let me - if you will let me conduct it the way I mapped it out I will go on. If not I will sit down.

THE CHAIRMAN: Then please yourself Mr. Fenerty.

MR. FENERTY: Then I will go on.

Q Why did you not consider Canmore stoker and Lethbridge coal Mr. Zinder ?

A It was based upon my opinion that they were not available in this market in this area.

Q Well let me see. We have hearsay evidence again. I wonder how I am going to deal with it. You say Lethbridge was not available in this province. Did you have that information ?

A My information was that - let me put it this way Mr. Fenerty - either not available or not commonly used.

Q And consequently I take it you did not make any analysis how those coals would affect the picture if they were available ?

A That is right.

Q Now for instance if Canmore stoker coal with 14,670 B.T.U. were



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available at \$4.22 a ton with freight rate of \$1.50 Canmore to Calgary, might that make a very substantial change in the picture ?

A What change it would make I do not know until I have figured it out.

Q Pardon me 14,000, I gave you the briquette B.T.U. It should be 14,000. I do not want you to work it all out. Might that change the picture very considerably ?

A It might. I do not know whether it would or not until I have figured it out.

Q I see. Now you were speaking of this semi-anthracite, the Highwood area, you said you had no data on that ?

A That is right.

Q Is there no data on the analysis of that coal, moisture content and B.T.U. and so on ?

A I have not seen any.

Q Do you know whether it is available or not. Did you say there was none available or you had just not seen it ?

A As far as I know it is not available Mr. Fenerty.

Q THE CHAIRMAN: You mean the coal or the figures ?

A The figures. I have not seen any and enquiries have been made. That is right, I have not been able to find any.

MR. HARVIE: Mr. Fenerty, would you mind giving me the cost of that coal at Canmore, you read the figure.

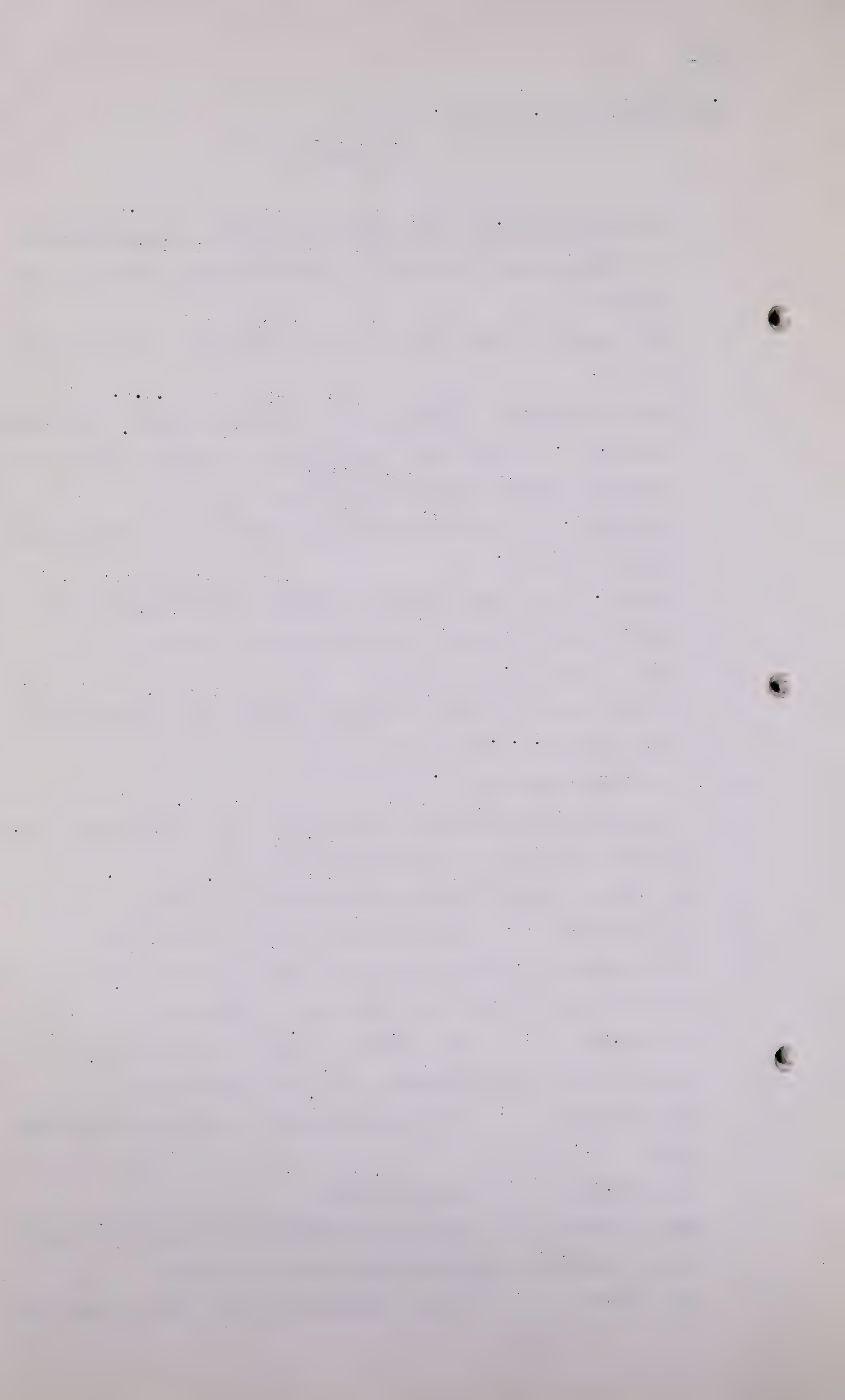
THE CHAIRMAN: It was objected to and the objection was good.

MR. FENERTY: What is that ?

THE CHAIRMAN: That was objected to going on the record and I think the objection was a good objection.

MR. HARVIE: No one objected to that when he asked the





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witness.

MR. STEER: He asked the witness to assume the price.

MR. FENERTY: I want to spread something on the record now so that I won't be subjected to censure in the future. If I am going to be treated this way about evidence from other people then I am objecting to anyone here putting on the record any facts obtained from someone else but only from someone who knows the facts and the business. Everybody has been here nine months and it would be probably twenty-three months if we go on and there is not a bit of evidence in a report that is not founded on something from someone else. This is the first time that an objection has been made that these facts cannot be taken from someone else. We have had witnesses preparing geological reports and the reports were taken from the records of the Conservation Board and they were taken from different wells and there is not a driller or anybody else has come here to prove the correctness of the logs or the Conservation Board records and everybody has taken it up until this moment and if this is the position with regard to statements then I am going to take the same position in the future.

MR. BLANCHARD: I do not suppose Mr. Fenerty is trying to prove the figures he has used in cross-examination.

MR. FENERTY: I am being censured for the course that has gone on for nine months and so far as I am concerned everything is going to be original.

THE CHAIRMAN: Please yourself Mr. Fenerty.

MR. FENERTY: I will endeavour to, and I am going to give warning to my friends now.

MR. CHAMBERS: We do not need a warning, we will try to look after ourselves as best we can irrespective of any warning.





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MR. FENERTY: I am sure you can look after yourself.

MR. CHAMBERS: I said we would try to.

MR. FENERTY: But I do not understand the objection that is now taken to something that has been going on for nine months.

MR. CHAMBERS: I submit it is not the same objection. The people who prepared the reports were at least in the box for cross-examination and as I understand it my learned friend intended to put in a letter from some Association to prove something. Now I say that the man who wrote the letter or somebody should go in the box so we can test it.

MR. STEER: And his evidence would be hearsay too.

Q MR. FENERTY: Just to clear up that point these coal figures you have given us, you got them from someone else ?

A Yes they were obtained by enquiries that were made in the city from coal dealers and others.

MR. STEER: By whom were the enquiries made ?

Q MR. FENERTY: I take it the Board will feel it is too late for me to object to anything in this report going in that was obtained from anybody else ?

THE CHAIRMAN: Will you please go on with your cross-examination, Mr. Fenerty ?

MR. FENERTY: Yes, I am asking to be permitted to object to the entire report as being figures obtained from someone else.

THE CHAIRMAN: All right, your objection is not sustained. Now will you go on ?

MR. FENERTY: Yes, I am just asking it for the record.

Q Now Mr. Zinder in dealing with prices of coal, Page 4 you say, "However, it is clear that under normal conditions if a



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demand were to occur for the smaller sizes of coal, the prices for such sizes would increase because it might be necessary to crush the lump coal to supply this demand."

Now do you know anything about that yourself ?

A That is based upon my enquiries and investigations. I find it generally recognized that that situation has occurred at times. It depends upon the relative market for the crushed coal and the lump coal as to which becomes treated as a product and which a by-product.

Q Do you know anything about the particular problems involved in the handling of Alberta coals ?

A I have not made a study, no.

Q Did you make any investigation as to one of the great problems with many of these coals is to get coal in lump size. It does not all fracture in smaller sizes.

A No I would not think all of it would fracture.

Q Did you investigate whether or not that is a problem ?

A No I did not.

Q Whether it is very simple and very cheap to mine coal in that form if you do not pay any attention to getting out lump ?

A May I have the question again ?

Q (Read by Reporter) Whether it is very simple and very cheap to mine coal in that form if you do not pay any attention to getting out lump ?

Q What I want to put to you is this, -

A Pardon me, my answer is, I have not made any investigation of those factors.

Q Insofar as you are concerned it might be possible if you were not trying to get out lump coal in mining, just confining



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1. The first part of the paper is devoted to a general discussion of the problem of the origin of life. It is shown that the problem is one of the most important and most difficult in the history of science.

2. The second part of the paper is devoted to a detailed discussion of the various theories of the origin of life. It is shown that the most plausible theory is that of the spontaneous generation of life from non-living matter.

3. The third part of the paper is devoted to a discussion of the evidence in favor of the spontaneous generation of life. It is shown that the evidence is very strong and that the spontaneous generation of life is a fact.

4. The fourth part of the paper is devoted to a discussion of the various objections to the spontaneous generation of life. It is shown that the objections are not valid and that the spontaneous generation of life is a fact.

5. The fifth part of the paper is devoted to a discussion of the various theories of the origin of life. It is shown that the most plausible theory is that of the spontaneous generation of life from non-living matter.

6. The sixth part of the paper is devoted to a discussion of the evidence in favor of the spontaneous generation of life. It is shown that the evidence is very strong and that the spontaneous generation of life is a fact.

7. The seventh part of the paper is devoted to a discussion of the various objections to the spontaneous generation of life. It is shown that the objections are not valid and that the spontaneous generation of life is a fact.

8. The eighth part of the paper is devoted to a discussion of the various theories of the origin of life. It is shown that the most plausible theory is that of the spontaneous generation of life from non-living matter.

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yourself to smaller sizes, the coal might be even cheaper in smaller size than they are today. Did it ever occur to you that might be so ?

A No, it never has.

Q So you really do not know the conditions and the qualities of our coal which would tell you whether the price would decrease or increase with the using of certain size ?

A I would say I have not made any investigation of the mining of coal in Alberta and I do not know what their problems are. I have stated that if conditions such as I indicated would occur that is what might happen, that is all.

Q Have you heard or have your enquiries indicated that the coal problems in Western Canada is market and not production ?

A I have not.

Q Have you heard for instance we have too much coal; that we do not know what we can do with it in Western Canada available?

A I have made no study of it Mr. Fenerty.

Q And in the ordinary course of the law of supply and demand if that were the situation here you would expect it would tend to decrease prices would you, of coal. If you could not get a market for your production ?

A It depends upon whether the present prices are already down to what I would term the increment cost of mining.

Q If you get below the cost of production you could not keep on ?

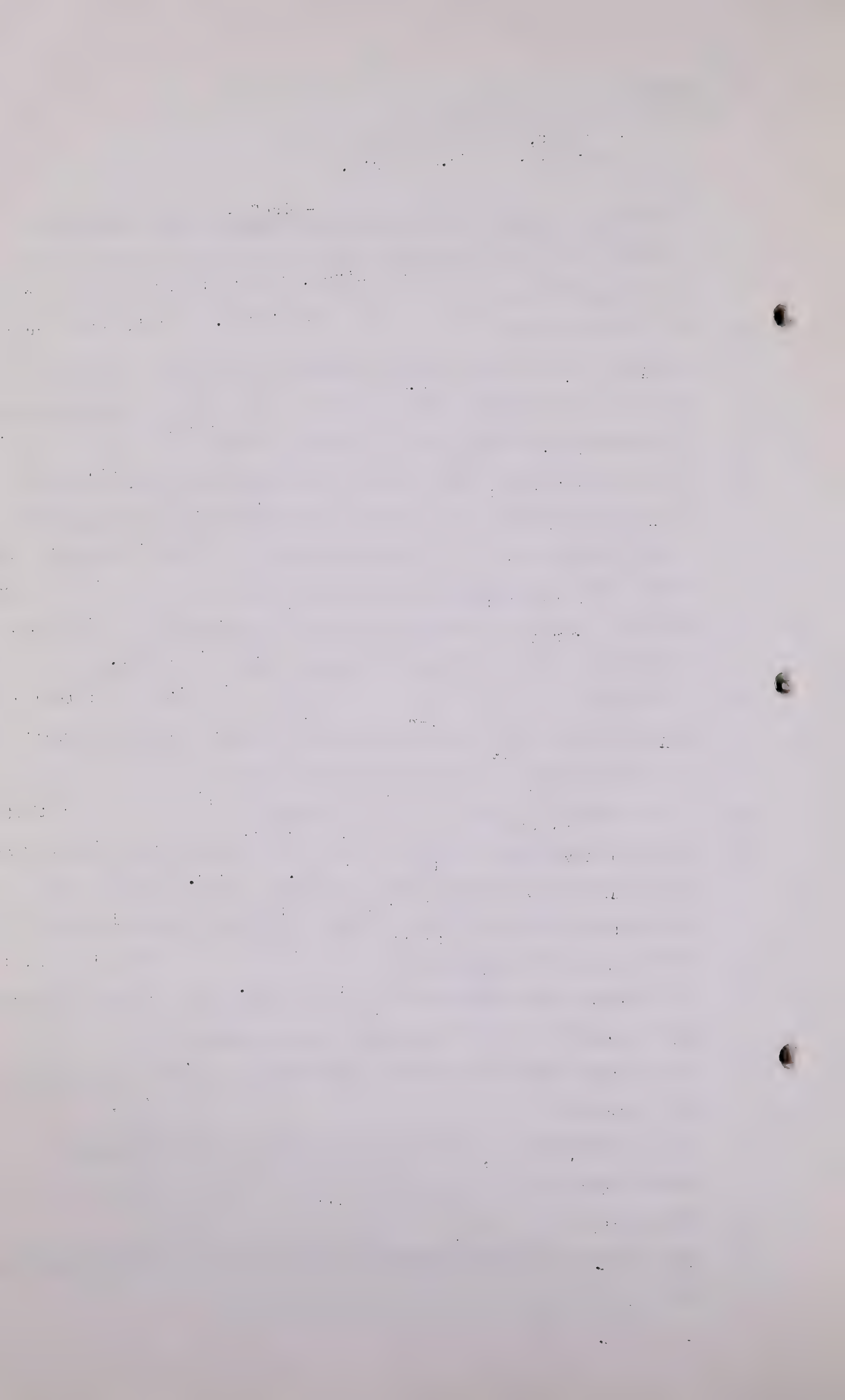
A That is right.

Q And if above cost of production it would tend to decrease prices would it ?

A Yes.

Q And the same law should apply to gas should it not particularly?

A Yes.





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Q Particularly if you had no cost of production ?

A Yes.

Q That is getting back to the old law of supply and demand ?

A I would think so generally, yes.

Q But your whole brief is based upon the proposition that that law does not apply to gas ?

A No I would not say so.

Q Well you know one of our problems is that in certain seasons we have a great excess of gas over the demand for it. You know that don't you ?

A Yes.

Q And I say then should not the same apply to that as you have just told me should apply to coal. You have no cost of production if it is produced as an incident of oil operation ?

A I think in my submission here before I had some figures as to the cost of production of gas.

Q Now I want to come to this relevant efficiency. My understanding is that you do not know about the relative efficiencies of this gas we use here and the coal you use here. You have taken these figures from a submission filed by the Canadian Western Company ?

A Yes.

Q And my understanding is that those figures are the figures taken in the Denton & Spencer report which has been withdrawn. Do you know that ?

A I do not recall what decisions were in there.

Q Perhaps I won't take up too much time but my submission is that those figures appear in the Canadian Western Report which purports to be an answer to the Denton & Spencer report based upon the same thing. Do you appreciate that might be the



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position?

A It might be possible, I expect. I do not know whether it was an answer to that report or not. It was a submission made by the Gas Company.

Q Have you any independent opinion as to the relative efficiency of gas and coal ?

A Well I have an opinion, Mr. Fenerty, based upon my information. I think that the efficiencies which were used by the Gas Company and seeing them here in this report, I would say generally in line over a period of figures. I have seen a lot of figures as to comparative efficiencies and they seem to be about in line with what I have commonly ran across.

( Go to Page 4970 )





H-2-1 11.15 a.m.

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Q I see. Now in considering those efficiencies, do you consider the analysis of the gas we use here?

A What do you mean by analysis of gas used here?

Q Well, as to the moisture content, as to the various other elements making it up?

A Well the efficiencies used reflect the qualities of the gas and the coal used.

Q Now, I want to try and make a few comparisons with you, Mr. Zinder, and I will have to use information that neither of us has personally. We have to get it from somebody else.

A Yes.

Q Have you considered or do you know that there may be approximately 10% moisture in this gas we are using here?

A I would assume there is some moisture, yes.

Q And that there might be approximately 5% hydrogen?

A There might be some hydrogen in the gas, yes.

Q When I say 10% moisture there, it would produce 10% moisture when burned?

A That is what I am taking.

Q You are taking that?

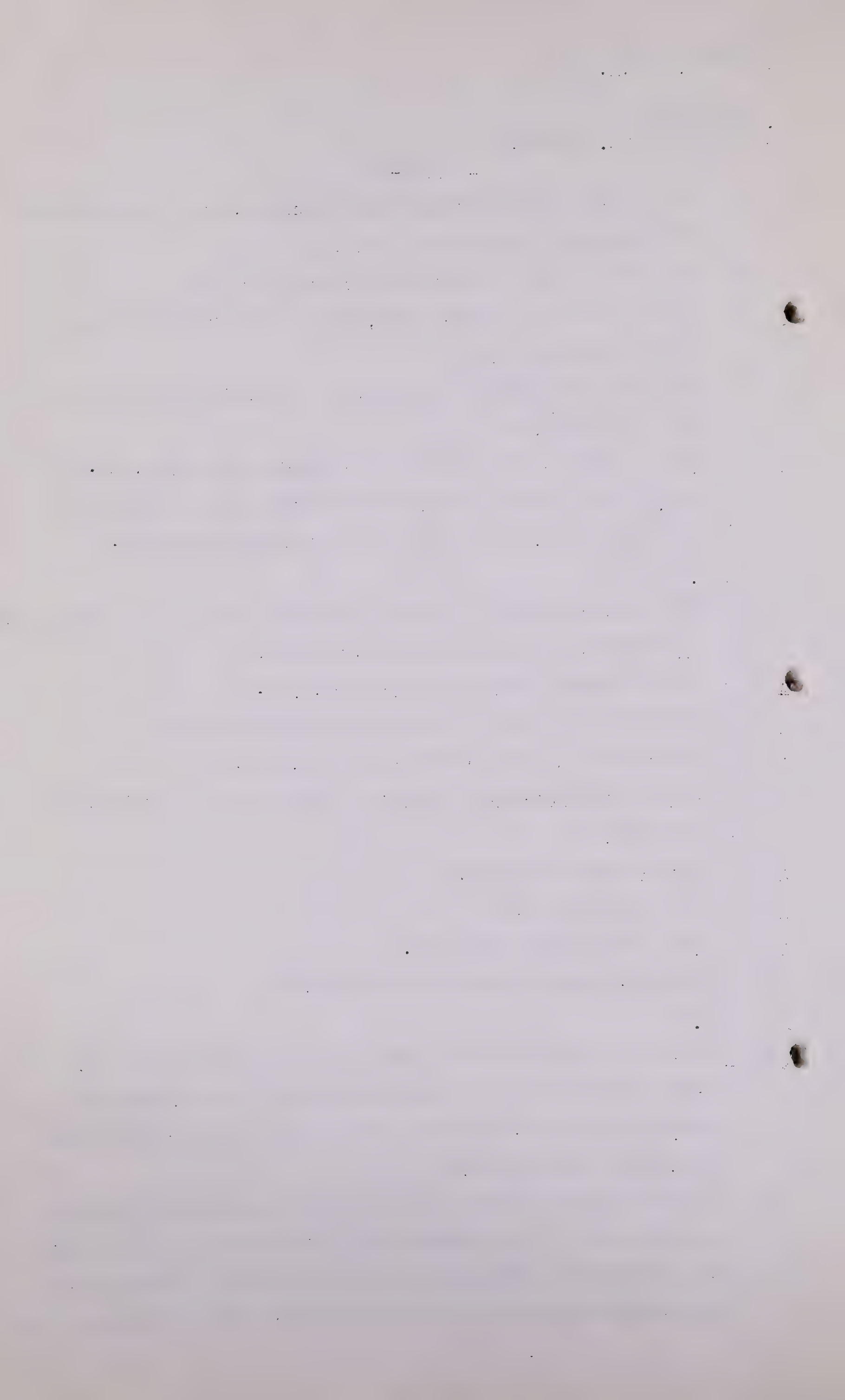
A Yes, that is what I am taking.

Q And there might be perhaps 5% hydrogen?

A Yes.

Q And did you know that the percentage of moisture in these coals we have discussed depending on when the analysis was taken, might be one-third or less of the moisture which would be produced when burned?

A I made no study of it as to the relative moistures in the gas and the coal. I have taken these efficiencies as being overall comparative efficiencies which reflect the differences in the moisture content of the two fuels and in the burning of the





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hydrogen.

Q What I am suggesting is that due to some 5% hydrogen and 10% moisture produced when burned, that the maximum efficiency of gas under perfect conditions can be only 85%, might that be so, or do you know?

A I would not know with regard to this gas what its maximum efficiency might be, no.

Q I am going to suggest to you that we already have in some tests the actual efficiency of Alberta coals up to 89%, or 4% in excess of the theoretical perfect efficiency of gas. Do you know about that?

A Well, I can visualize a situation, Mr.Fenerty, where you would get a higher efficiency for coal than gas. For example, if you took a well-designed power plant.

Q Oh yes, oh yes.

A As against, we will say, a very old boiler and power plant. The relative efficiency might be relatively different.

Q I am talking about the maximum and the best possible plant you can get, the 89%?

A Well I do not know.

Q But it might be, might it not, and if you made inquiries you might ascertain that in the best possible designed power plant using coal, that you might get an actual efficiency in excess of the theoretically perfect efficiency of the gas, that is what I am trying to get?

A I would assume that the difference between 85 and 89% maximum efficiency, might be possible under certain conditions.

Q If the Board pleases, I want to ask the witness a question or two with reference to the report of the Research Council of Alberta, and I will wait until my learned friend, Mr. Chambers, makes his objection.



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MR.CHAMBERS:                   You ask    him a question and I will  
see if I will object to it or not.

MR. FENERTY:                   May I examine Mr.Zinder on the state-  
ments contained in this report, Mr.Chairman?

MR. STEER:                    It purports to be printed by the  
King's Printer and it is admissible itself.

MR. FENERTY:                   I wanted to see if my learned friend,  
Mr.Chambers, wanted to object to my using any of the material.

MR. CHAMBERS:                 I will let you know at the time if I  
do or not object to anything.

THE CHAIRMAN:                 Well, all that is quite unnecessary,  
Mr.Fenerty.

MR. FENERTY:                   I am sorry, Mr.Chairman, and I will  
apologize and go on with the matter from there.

Q    On page 60, report of the Research Council of the Province of  
Alberta, .....

MR.BLANCHARD:                 What year is that?

MR. FENERTY:                   1944.

Q    "It might be noted, however, that the reports cited include  
operating data on some large modern boiler plants, and that  
these data show high efficiencies with both Alberta domestic  
and Alberta steam coals. Efficiencies as high as 80% are shown  
with domestic coal (Subbituminous B), in a stoker fired furnace,  
and as high as 89% with steam coal in a pulverized coal fired  
furnace." Now, assuming that that is correct, I think we have  
to take it that that is in one of the most efficient coal plants  
that you can get, undoubtedly that would be the situation,  
I understand that is not normal efficiency, that is a very high  
efficiency.

A    I might call your attention, Mr.Fenerty, to the fact that those  
tests were not made in a single boiler plant, but in some large





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modern boiler plant, a number of them, and, therefore, the comparability between those boiler plants, I would not be able to say.

Q But if that be so, that those efficiencies have been obtained, the point I want to make is, will you agree with me that they have obtained actual efficiencies in excess of a theoretically possible efficiency of gas, that is what I am trying to get at?

A Well, on your assumptions, or statements, I would say the answer is "Yes". The assumptions being that the theoretical possible maximum efficiency of gas is 85%, and that actual coal efficiency of 89% has been obtained.

Q And in this report that has been withdrawn, there is a table No. 6, that is the Report, Messrs.Denton & Spencer. I would like to refer to this Table which is in here. Have you got that report in front of you, Mr. Zinder, the Denton and Spencer Report?

MR.BLANCHARD: Five or six?

Q MR. FENERTY: Here you are, Mr.Zinder. You will see there in the second column.....

MR. STEVENS-GUILLE: Which is the Table number?

MR. CHAMBERS: Table number 5, or Table 4?

MR. FENERTY: Did I say 6?

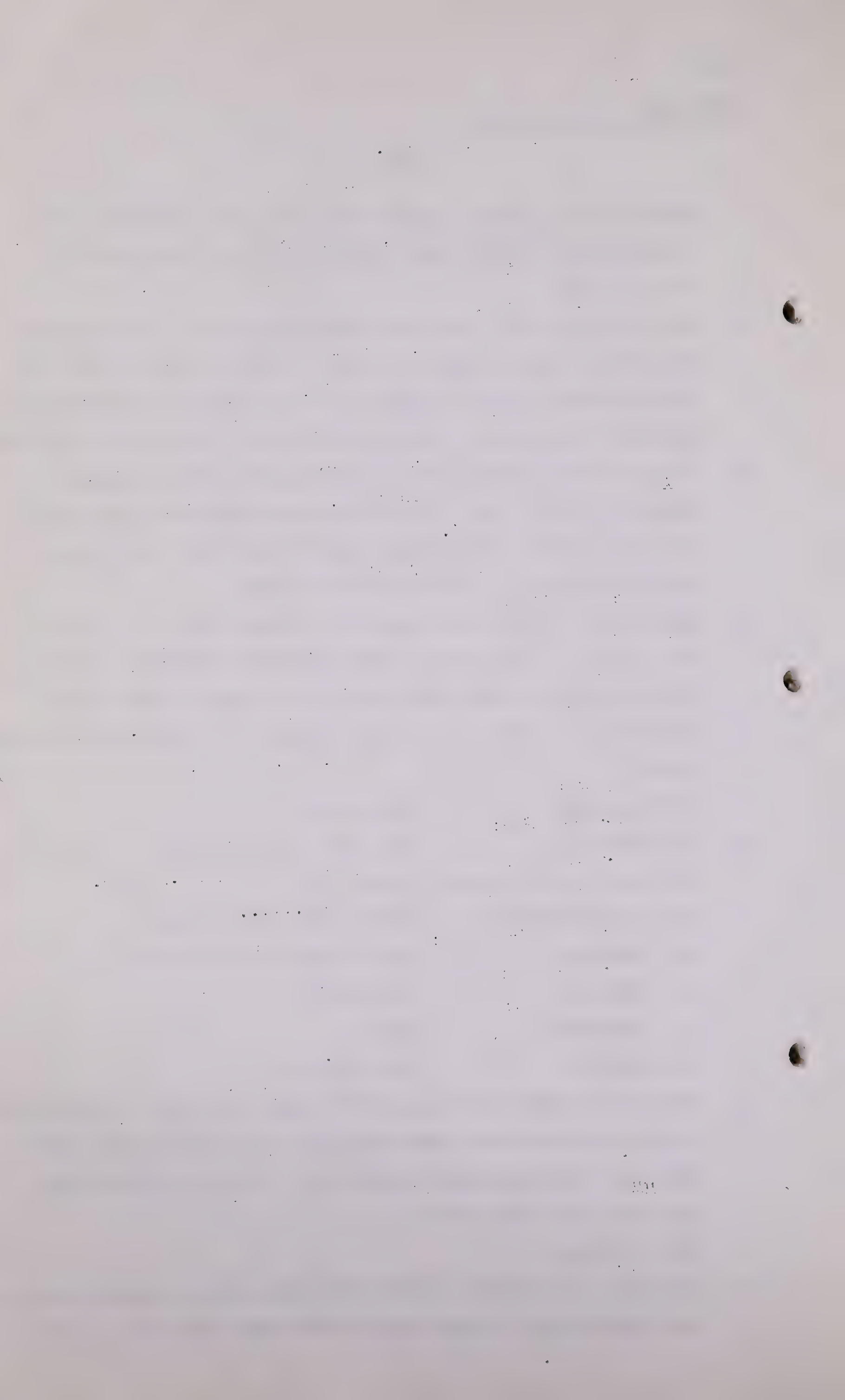
MR. CHAMBERS: Yes.

MR. FENERTY: Table No. 4.

Q The City of Edmonton received 76% clear, the City of Lethbridge 78.6, Saskatoon Power Commission 72, East Kootenay Power 80%, Moose Jaw National Light & Power 81%. Do you know anything about the coal used there?

A No, I do not.

Q Would you be surprised to find that some of the Edmonton coals, some Drumheller, and some Crow's Nest were used.Would you be





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surprised to find that those coals would give you those efficiencies?

A No.

Q All right.

A On this Table, if I might add, Mr. Fenerty, that there is one very important factor as to the efficiencies, in my opinion, with regard to those operations, and that is the annual load factor of that is shown in line 24. For example, the Moose Jaw plant, which shows the highest efficiency, has the highest load factor. The one with the, with just about the lowest efficiency has the next to the lowest load factor, and so there are many factors that enter into it.

Q I am just giving you those illustrations to show where these coal efficiencies can go?

A Yes.

Q Now, Mr. Zinder, we have some very substantial improvements in the method of handling coal and in burning it, haven't we, in recent years?

A You refer to pulverization of coal?

Q With regard to stokers and in coking furnaces, and various things of that kind?

A I understand so.

Q And we have had a very appreciable convenience in the sense of burning coal in recent years as compared with the burning of gas, there has been more room for it?

A Yes.

Q And it has taken place?

A The extent to which it has taken place and actually adopted by the consumers, I do not know.

Q Now, have you been informed that in the City of Calgary amongst those burning gas in households particularly, we have a large



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number of consumers using or converting to coal furnaces?

A I would not be surprised. I have not been informed as to the number of such furnaces.

Q For instance, I have an old Gurney boiler in my house, with gas appliances installed?

A Yes.

Q You would not be surprised if there were a large number?

A That is right.

Q And you would not be surprised if the efficiency of gas burned in those boilers with an installation devised for coal, would be surprisingly low, would you?

A What do you mean by surprisingly low, Mr. Fenerty? I do not know.

Q Perhaps that is wrong, it is not surprisingly low to me.

Might it go down to 40 or 50 or 60%?

A It is possible.

Q Yes. And is it correct that the efficiency of the ordinary gas range runs perhaps from 40 to 45%?

A I do not know that, I couldn't say what the efficiency of the gas range is.

Q Do you know that at all?

A I do not know that is a fact.

Q. I see. Now I want you to picture the situation, with gas reserves declining, in other words, the Turner Valley situation, and I want to divorce your mind from any consideration of gas reserves in other parts of the Province, just that we are getting the Turner Valley gas here?

A All right.

Q And the reserves declining?

A Yes.

Q And the threat or a suggestion of increased prices of gas, and with a large number of householders having coal furnaces installed





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and using them, I suggest to you that what we must normally expect is a continuation by householders of those furnaces because of the possibility of having to convert to coal again in the future, that is right isn't it?

A I do not think I have got your question, Mr.Fenerty. Would you read it to me?

BY THE REPORTER READING: "Q And the threat or a suggestion of increased prices of gas, and with a large number of householders having coal furnaces installed and using them, I suggest to you that what we must normally expect is a continuation by householders of those furnaces because of the possibility of having to convert to coal again in the future, that is right, isn't it?

A That is possible.

Q That is possible, yes. On the other hand, those householders have been educated to a nice form of fuel to handle, gas, they have been using it for years, you know that?

A Yes, but I must have misunderstood your first question.

Q But I thought that you answered it?

A I did.

Q There was something you wanted to add to it?

A Yes. I understood your first question to be, Mr.Fenerty, that if the householder now is in Calgary and is burning coal, that if he sees a possible threat of an increased price in gas, that he is likely to continue his coal or might do so.

Q Well, he burns gas and will continue to use his old coal furnace, that is what I mean.

A Oh.

Q You see, because he might have to go to coal as the price might get prohibitive?

A All right.





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Q Now you will agree with me that that might be a possibility?

A That is right.

Q Now I say that the same householder has enjoyed all the advantages of easy handling of gas?

A That is right.

Q And if he does consider going back to coal, it is reasonable to suppose, is it not, that in the use of that coal furnace he will put in the latest appliances for handling coal to make it as nearly as possible as easy to handle as gas; that would be his normal trend, trying to get all the comfort and convenience he could get from coal, wouldn't he?

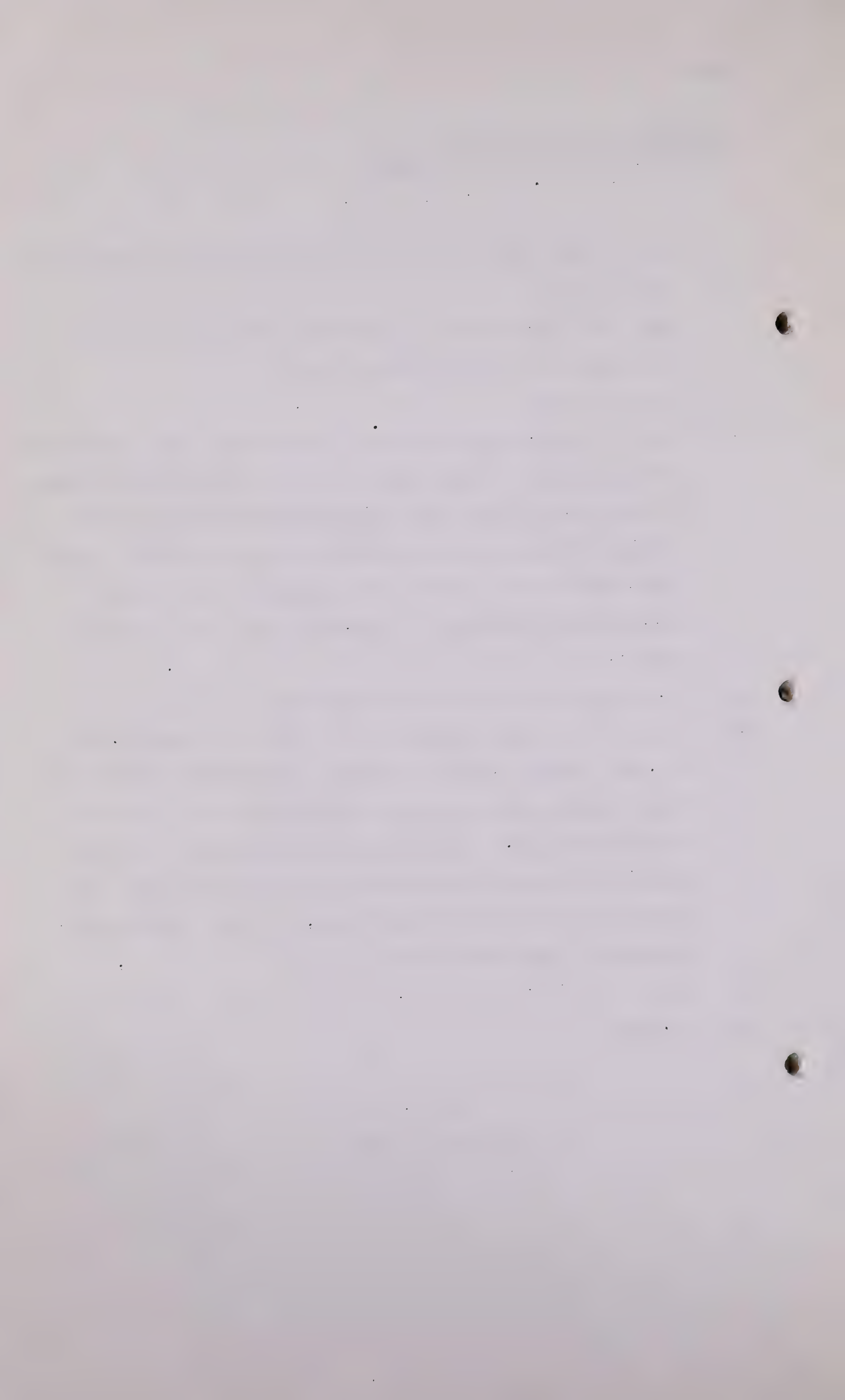
A If he had the money to spend for those conveniences.

Q Yes, so that now I suggest to you under the conditions we have in Calgary, as to whether householders would change from gas to coal, we should really compare the present inefficient gas outfit he is operating with, I do not mean all of them, but some of them, with the latest coal-burning devices that he could apply to that furnace, is that not a fair comparison?

A No.

Q Why not?

(Go to page 4978)



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A The householder now burning gas thinking in terms of converting to coal?

Q Yes?

A If he is also thinking in terms of putting in the latest type furnace, with a lot of appliances, to make that as efficient as possible under coal burning, there is an investment and the expenses and whatnot that he has to incur.

Q Yes?

A And then you would have to make allowances for that investment in making your comparison, so that your comparison would not be as I have made it, or as you suggest rather, it would not be as you suggest but you would have also to take into account the large investment.

Q Oh absolutely?

A For example, if you wanted to put in a thermostat, and put in an automatic stoker, and if he wanted to put in other equipment, there is an investment he has to make to do it.

Q And you would have to consider those costs of investment?

A That is right.

Q But I say, should not your comparison be, as between the present gas system he is using, with the type of system he would use if he burned coal, including all those expenses of doing that, should not that be the comparison?

A Well, I think I have said in the submission, Mr.Fenerty, that if you were taking a particular installation, you would include all the factors, you would put in, or you would go into some of those factors that I have tried to evaluate here.

Q I am asking you now, I am trying to get the thing as quickly as I can, should not your fair comparison, under the conditions we have in Calgary and the possibility of increasing prices, and the ultimate loss of our Turner Valley gas for household





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purposes, should not the comparison be between the present efficiency of gas and the efficiency of coal, if he turns to coal, and putting in these appliances, is not that fair?

A My answer is no, in my opinion.

Q Because you have got to consider the price of what he has to put in?

A Yes, that is one of the things.

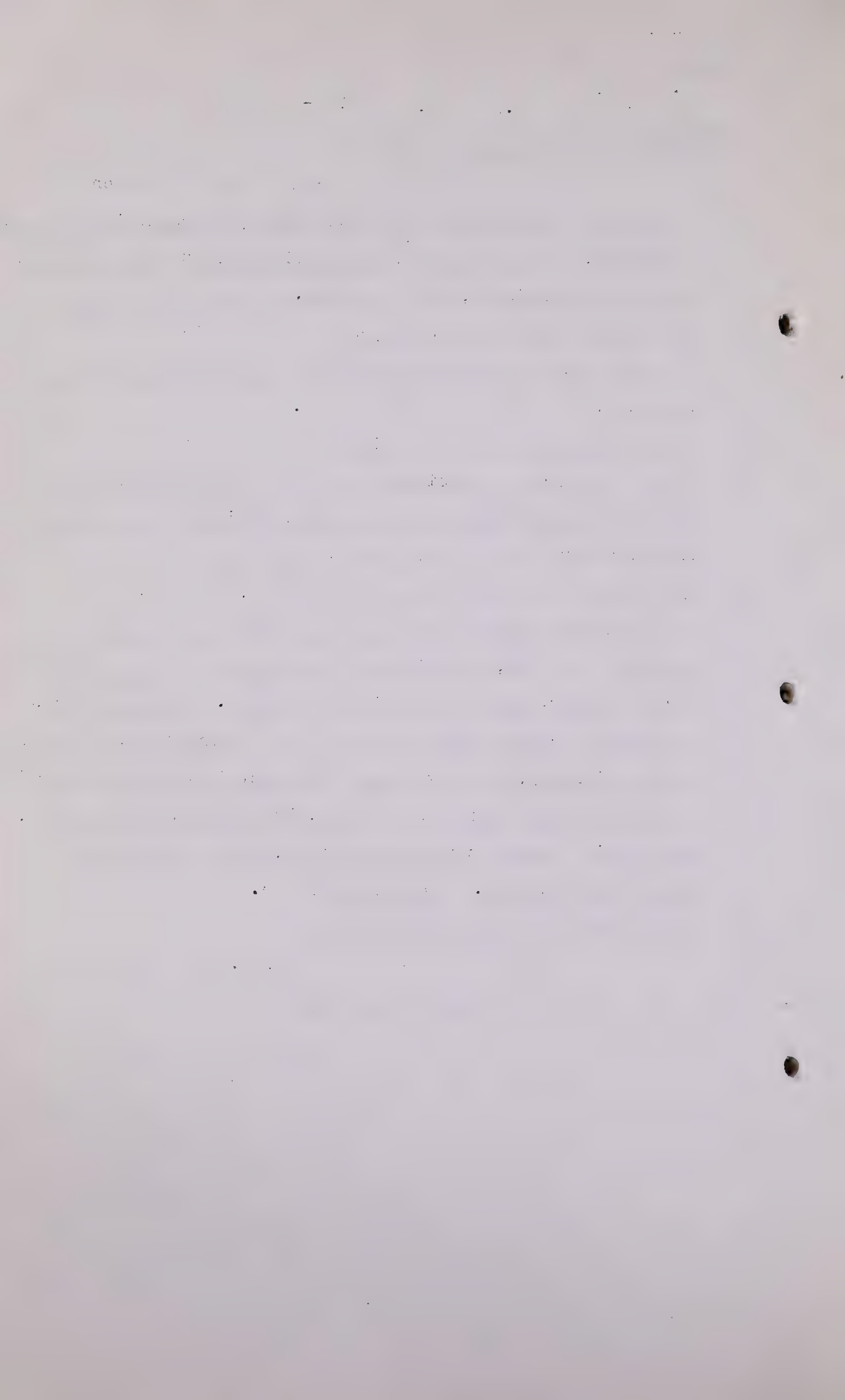
Q Has it anything to do with whether the comparison should be between an inefficient and an efficient system, that is one of the things that you consider, isn't it?

A I am trying to arrive at it.

Q We are talking about efficiency now, you see. I know it is going to cost him more to put in an underfed stoker or an iron fireman, than if he puts in a couple of old bars with a shaker. I am not talking about that. Would not that be the proper comparison when you make the comparison, as to the efficiency, you have got to discount it because of turning around and making the change, but as to the efficiency, isn't that the proper comparison?

A I would say no. That is my answer.

(Go to page 4980. )





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Q The situation about efficiency is that you do not know and I do not know and nobody else knows the relative efficiencies of gas and coal in Calgary today.

A To my knowledge, nobody has actually made a test.

Q As I said before, such information we have, applied perhaps only to large plants and very efficient units is definitely in favor of coal. The actual figures we have in any case. Is that true?

A I have not seen any figures.

Q Oh yes you have, you have seen the 89% and the 76% and the 80%.

A Mr. Fenerty, I believe that is just for power plants.

Q Yes and those are the only ones we have.

A That is power plant use and that is entirely different in my opinion than ordinary domestic and commercial use.

Q But applied to power plants and as far as I know those are the only figures we have.

A Then I have to call your attention, Mr. Fenerty, to the fact that there is a difference in load factor and the operation of these plants as compared with some of the other plants.

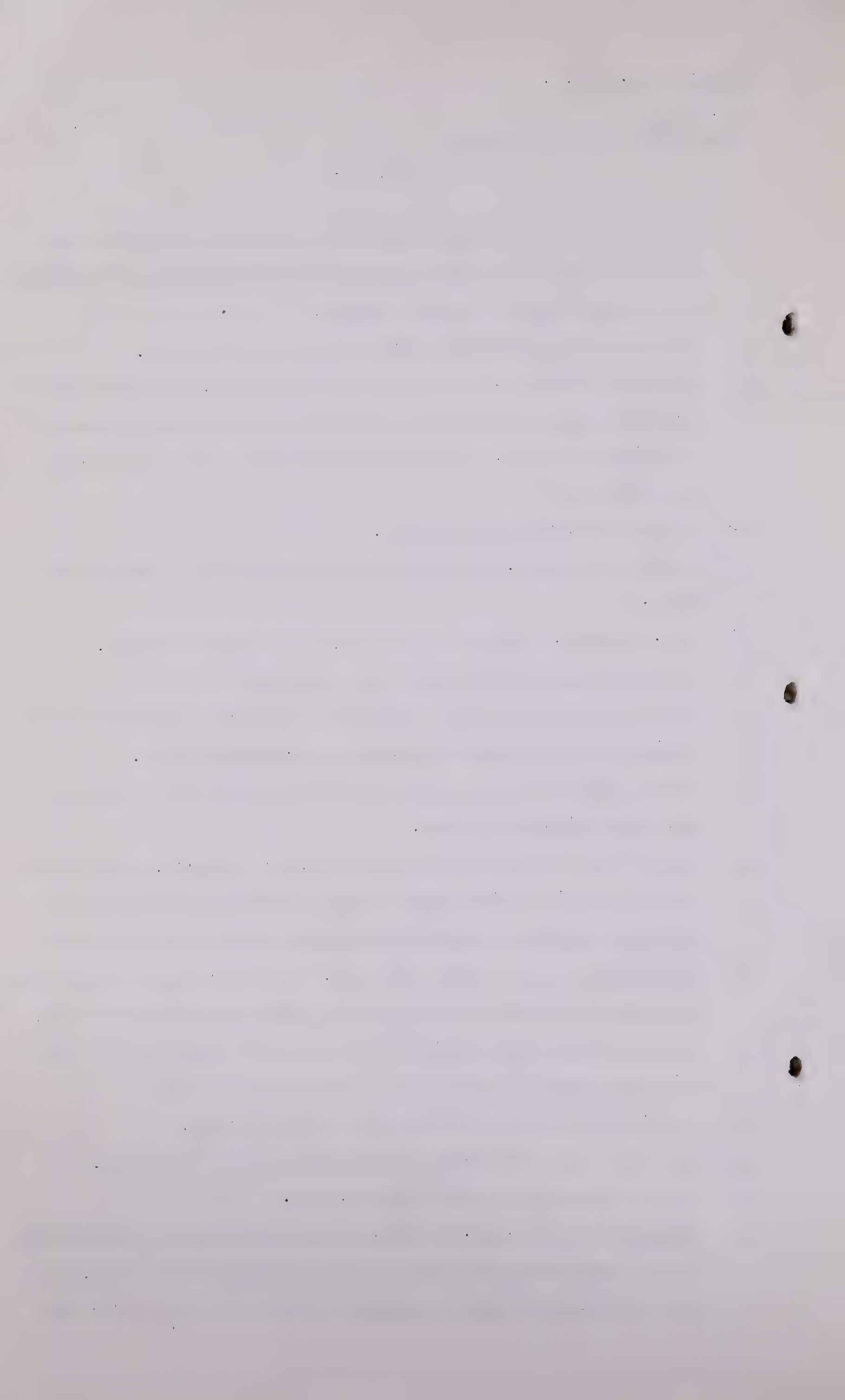
Q Such figures as we have, you say, are power plant figures only. But such as we have, and they are power plant figures only, they are certainly in favor of coal, are they not? If you will not answer me or if you do not know, say so.

A I will have to refer back again to that Table.

Q Well the figure of 89% is definitely in favor of coal.

A It is higher than these figures, yes.

Q I suggest to you, Mr. Zinder, based on the conditions we have here, with gas being burned in coal furnaces and so on, you have really no reason to assume greater efficiency for gas



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than coal in Calgary.

A I would say I have reason to assume it, Mr. Fenerty. It has been, according to my observations, generally recognized that there is some difference in efficiency and that it favors particularly in the domestic and commercial use, it favors gas.

MR. FENERTY: I want to show my friends a letter and I want to show it to the Board because I am proposing to ask to put it in.

MR. CHAMBERS: I am objecting.

MR. HARVIE: Did you say you are objecting?

MR. CHAMBERS: Yes.

THE CHAIRMAN: You object to that, Mr. Chambers?

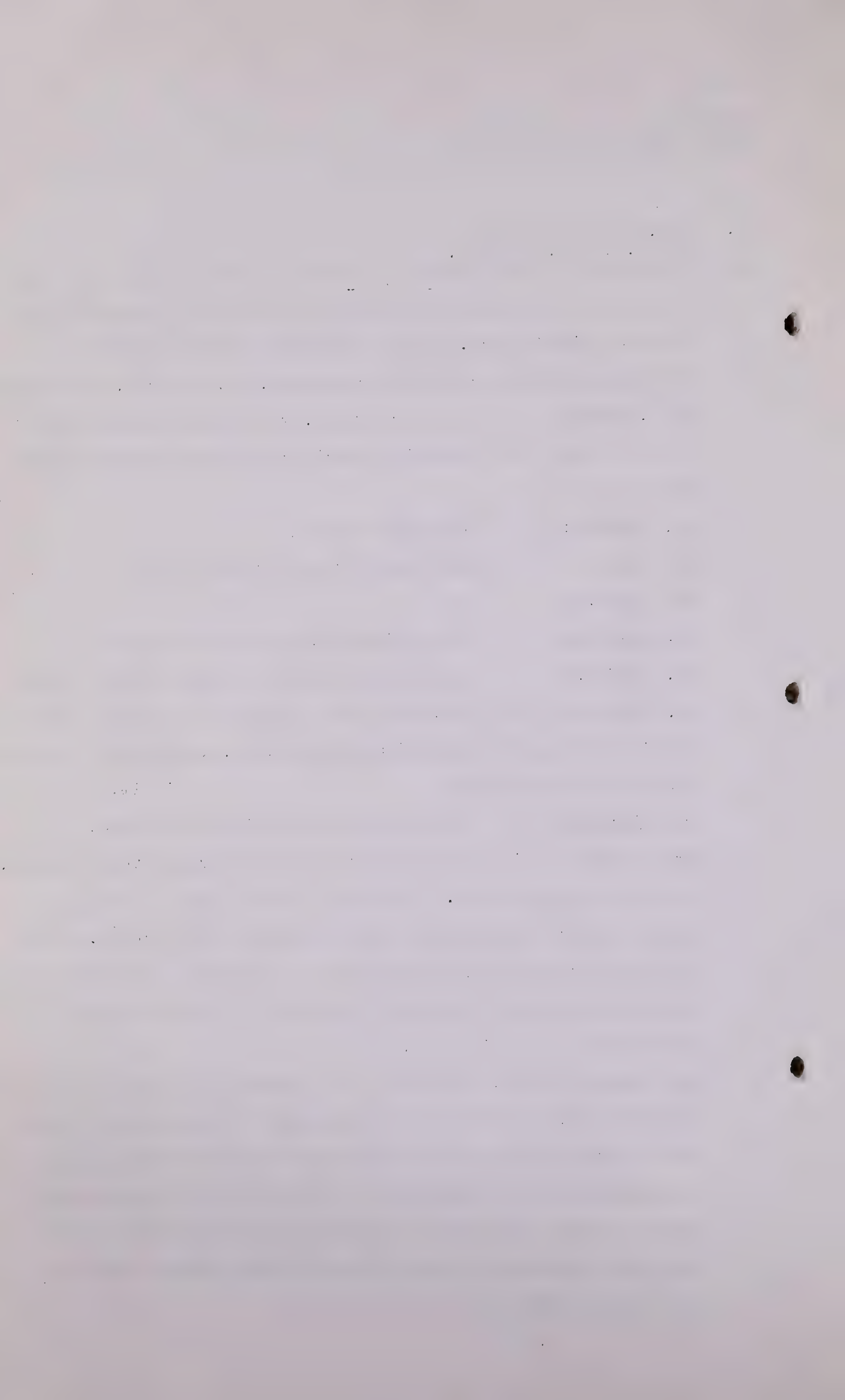
MR. CHAMBERS: As proof of what is stated in it. I have no objection to his discussing it, assuming that is so, but to prove the facts in there by handing it in through this witness, I am objecting to that.

THE CHAIRMAN: Your objection is a good objection.

Q MR. FENERTY: Assuming that in a commercial block in the City of Calgary there is a saving, we will say, of 30% in burning coal, Priddis coal, with an iron fireman installation as compared to gas, would that prove anything? It would prove something about that building but would it prove anything generally?

A Not conclusively in any sense, Mr. Fenerty, because there are those other factors I have mentioned, the storage of coal and so forth that would be taken into account in any study of a particular case. Investment in coal and all those factors.

Q Would it prove, at least in isolated instances, there was a very wide variation in efficiency from the figures you have used in your Report?





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A I would agree in isolated instances there are wide variations. I think I so stated.

Q That is the only way you can account for that, would be the difference in efficiency. Yes, the difference in efficiency would it not be?

A Yes, in your example.

Q And if such a condition did exist, even in an isolated instance it would tend to prove that we do not know very much about efficiency in Calgary, the relative efficiencies of gas and coal, would it not; under any given set of conditions?

A That is right.

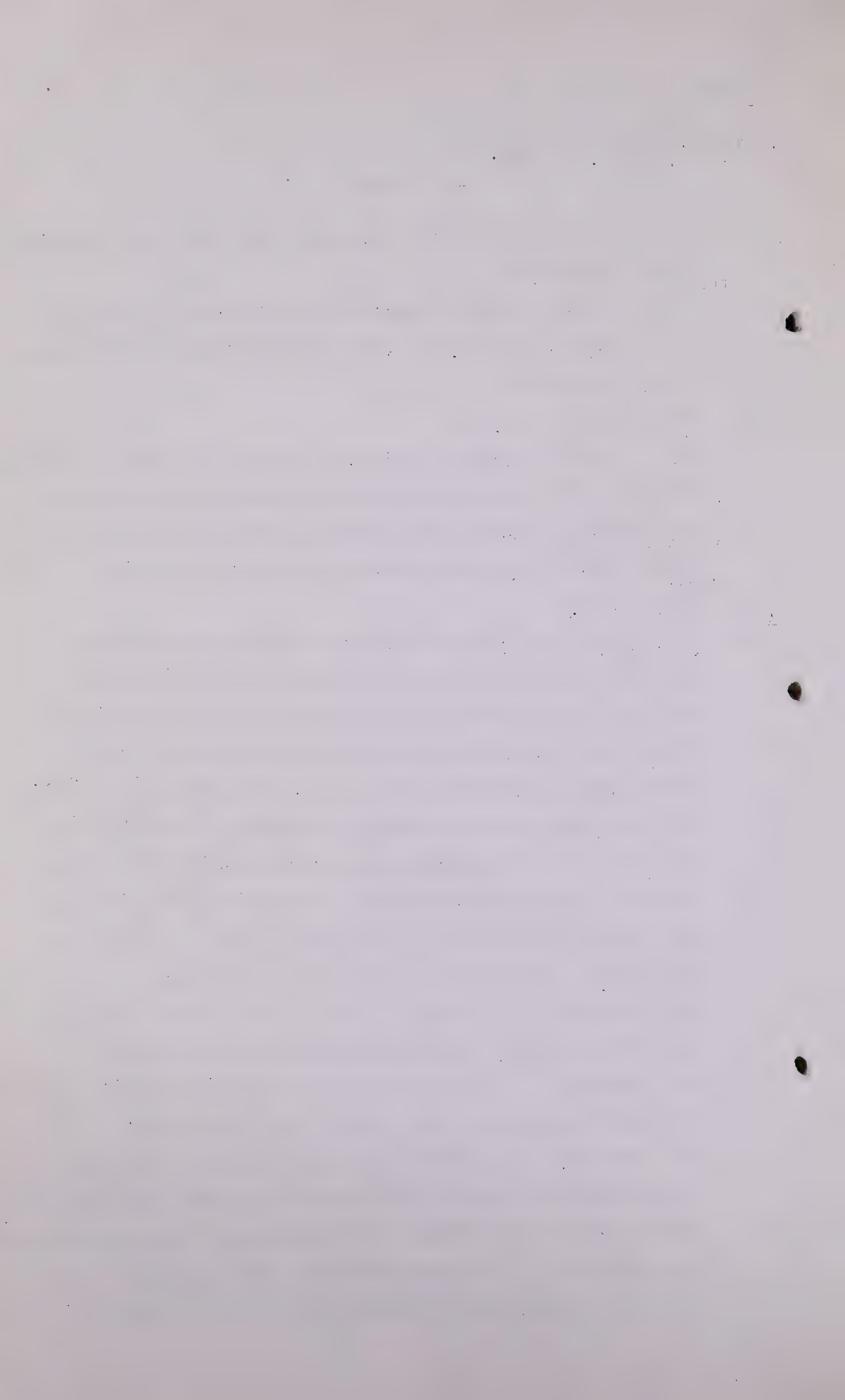
Q Mr. Zinder, I am going to hand you a statement containing what we think is an accurate statement of coal prices and I am going to hand you a statement showing the relative price of gas and coal worked out arithmetically on the basis of those prices and certain efficiencies, different efficiencies. I do not want to ask you to tell me anything about them now but would you mind checking those over with your own information and giving your comments on them perhaps tomorrow, if you are here tomorrow? I would like to have you do that if you would. I have not got enough to go all over.

MR. CHAMBERS: I take it this is being merely tendered for identification. You are not proving the contents.

MR. FENERTY: No, I want to see if it is correct. If it is not correct, we will have to get it corrected.

MR. CHAMBERS: I would like to be clear on this. Is my learned friend asking this witness to go away and establish the accuracy of everything that is contained in the statements?

MR. FENERTY: He has given me a list of prices and I want him to check these to see if our prices are correct.



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MR. CHAMBERS: How can he do it any better than anybody else. You are not just going to make him a messenger.

MR. FENERTY: I am quite willing to put Mr. Davies on the stand and check these prices but they are prices he got from somebody else. I do not want to call every operator in Canada to prove these prices. I am trying to get on with the thing.

MR. CHAMBERS: I am suggesting that this witness has been brought here at some expense from a long distance, and that you might put the same thing in through Mr. Davies. Nobody suggests you are going to be required to bring every operator.

MR. FENERTY: I produced a letter from the Western Canada Coal Operators' Association trying to prove some prices and the first thing I was met with some objection. I do not want to call every mine man to say what he sells his coal for.

THE CHAIRMAN: Are you going to start that all over again?

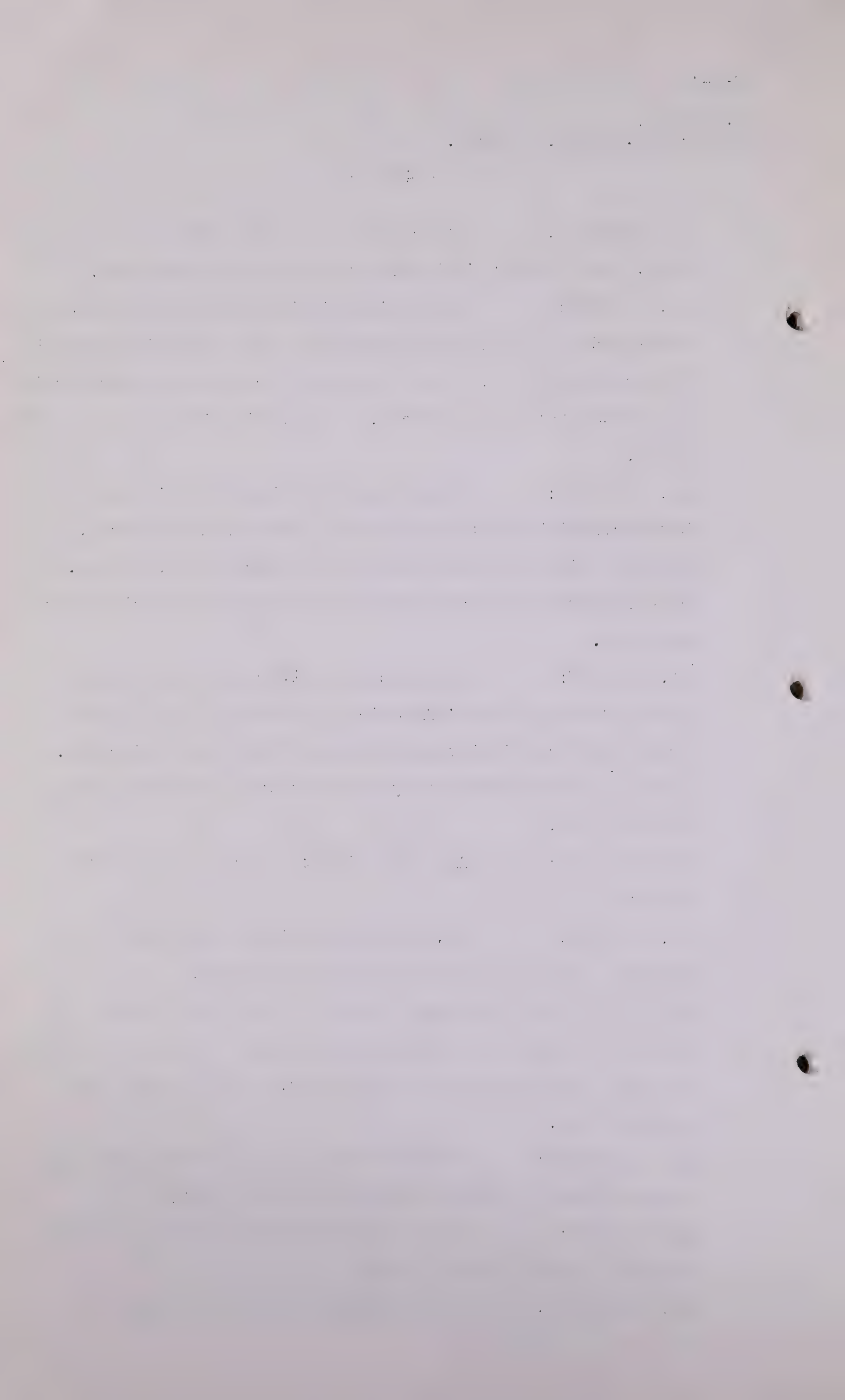
MR. FENERTY: No, but I am trying to get away from calling every operator to prove these prices.

Q You might check them over and see if they are correct. I am only trying to get these things before the Board without calling every operator in the Valley, that is what I am trying to do.

MR. BLANCHARD: Is this information available from the Coal Controller without going to the operators?

MR. FENERTY: These prices are the actual quotations from the people who sell coal.

MR. BLANCHARD: I was wondering if we could get this





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information from the Coal Controller?

Q MR. FENERTY: Now, Mr. Zinder, we will try and hurry on with this part. Considering this whole question of competition with other fuels, we are all in accord, are we not, that it is absolutely necessary, whatever else happens, to keep what market we have.

A I do not know that it is absolutely necessary but I will go along with you and say it is certainly desirable.

Q I do not want to go over all this business of spirals and so on. You realize, don't you, that we have a very substantial investment added to the previous investment in Turner Valley in connection with putting other wells on the line and repressuring and so forth?

A Yes.

Q You know something about that set-up?

A Yes.

Q In the Valley. I thought we were in agreement that one approach might be to try and enlarge the market by smaller prices. Do you remember telling me that before?

A Yes.

Q But that in any event, we should try and keep what market we have.

A I say it is desirable.

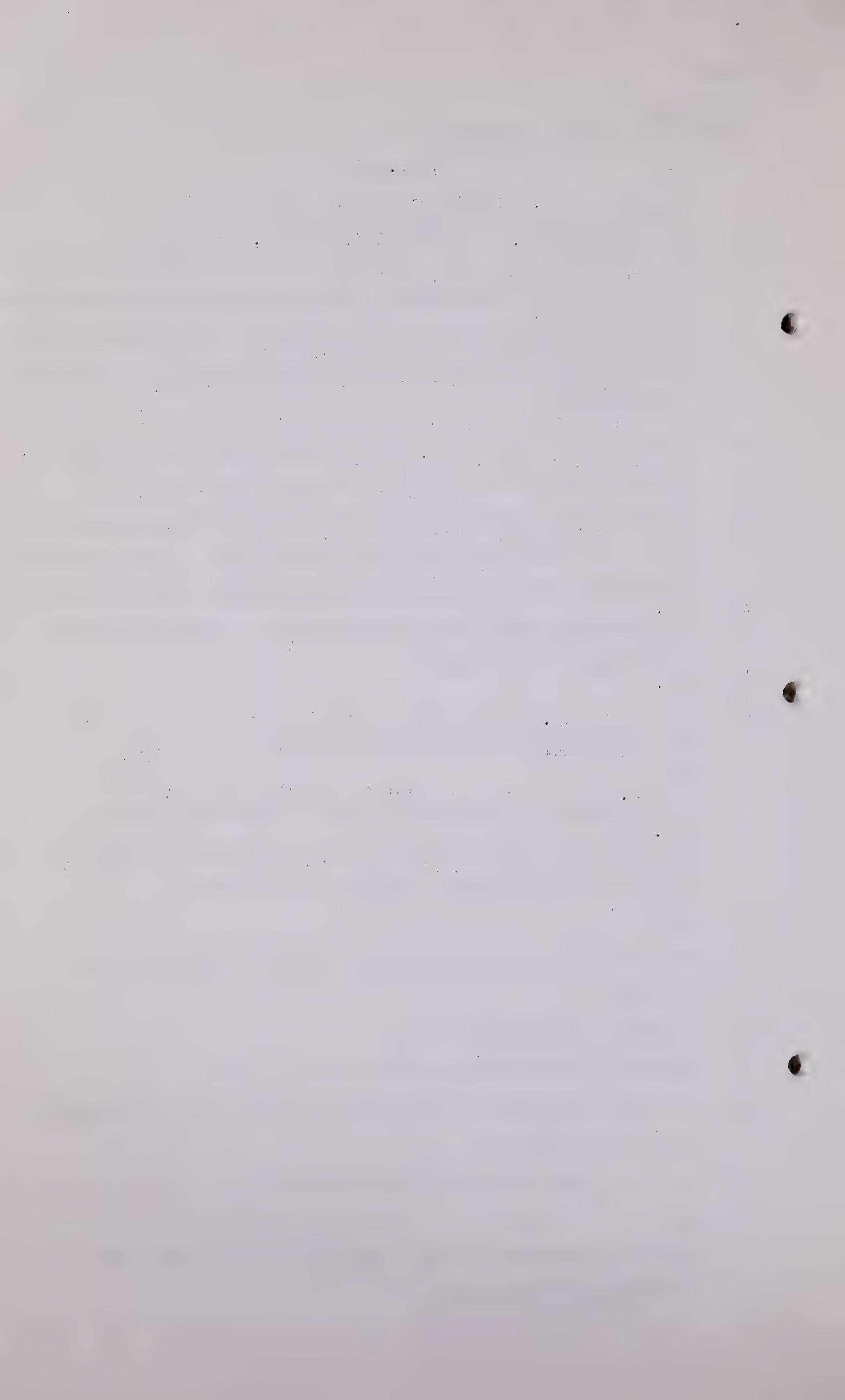
Q Otherwise, your cost per MCF spirals at once.

A I do not know what the cost situation is of the Gas Company system, Mr. Fenerty.

Q You will agree with me it is desirable?

A Yes.

Q And it is necessary, if you are not going to have this spiralling of the cost?



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A How necessary it is I do not know.

Q Now I want you to consider the City of Lethbridge for a moment. Assuming for the moment that the City of Lethbridge consumes some approximately 800,000 MCF out of 12,000,000 MCF or 15%. Ten million as a matter of fact, more than 15%.

MR. CHAMBERS: Is this per year, Mr. Fenerty?

MR. FENERTY: Yes, per year.

Q Assuming that is the consumption for domestic purposes. Take this figure of roughly 16% of the domestic consumption. I am not going to ask you to work out a sum for me. It would be of importance to keep that, would it not?

A It would be what to keep what?

Q It would be of importance to keep that market?

A Yes, I would think so.

Q You know, I take it, that there has been some discussion before this Board of the possibility of a block rate in connection with distribution. Not paying for gas such as you suggest but distribution.

A I do not know of that discussion, Mr. Fenerty.

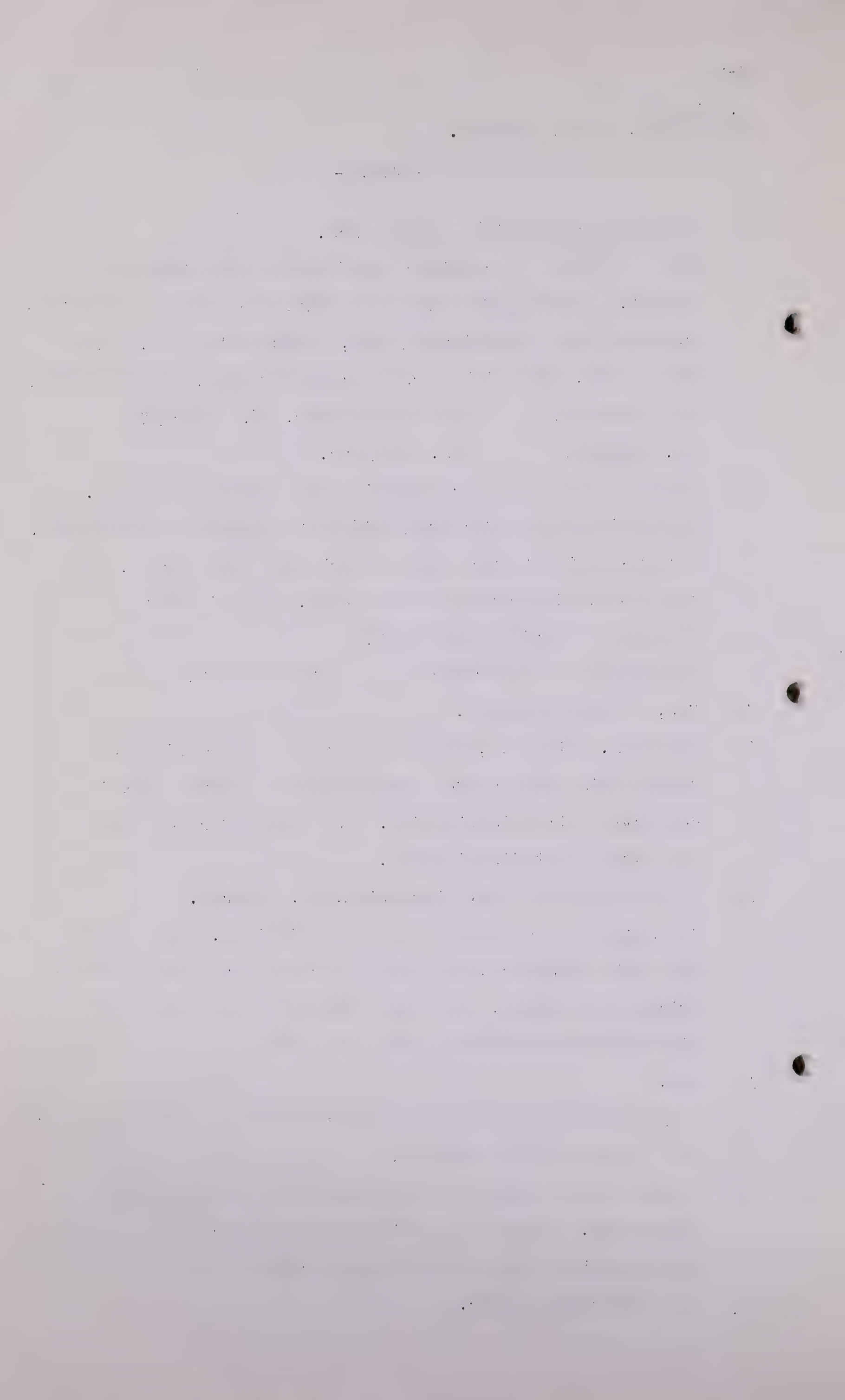
Q Assuming for the moment that some principal, such as that, came into existence, you had Lethbridge - as between Lethbridge and Calgary, you have Lethbridge at one end of the line and Calgary at the other, you see.

A Yes.

Q Do you know anything about the coal situation in Lethbridge?

A No, I have not gone into it.

Q I want you to assume for the moment that coal is mined in Lethbridge, adjoining the City and that in comparing Calgary and Lethbridge, you have Calgary further from the coal market and Lethbridge nearer.





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A Yes.

Q And that you have Calgary nearer the gas market and Lethbridge further away.

A Yes.

Q So that if that block rate should be, the block rate for transportation should go into effect, comparisons between coal and gas, apart from prices, would be much more favorable to coal in Lethbridge and much more favourable to gas in Calgary, apart from prices.

A Not necessarily, Mr. Fenerty.

Q No?

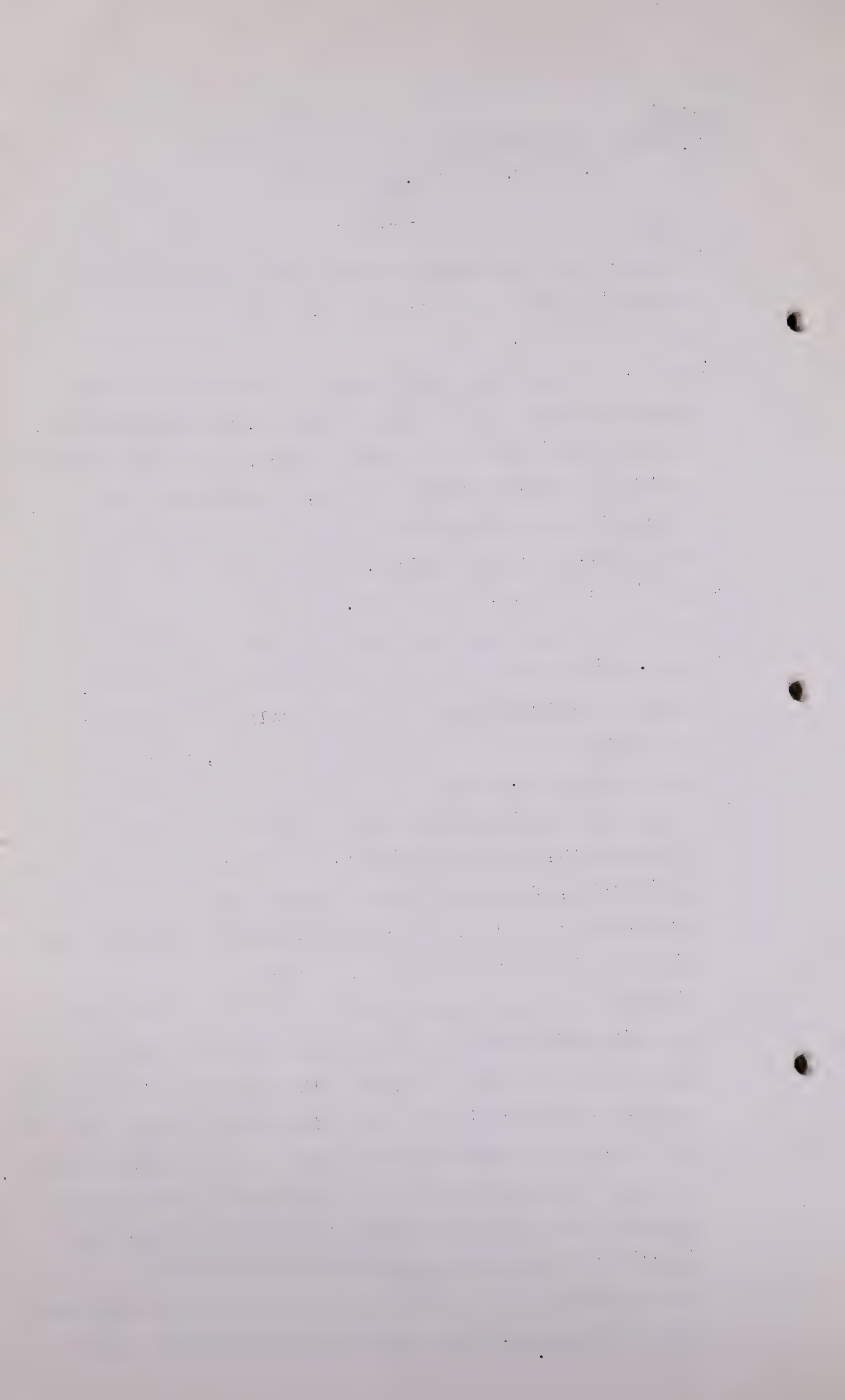
A No. It depends upon where the block rate is applied. If the block rate is applied for all sales to the Canadian Western, including fewer Lethbridge sales, there would not be any difference.

Q Take a simple illustration. Suppose we have a unit rate as we have now, with the same price of gas in Calgary as in Lethbridge, then apart from the actual price you pay for the coal, the comparison in favor of coal should be more favorable in Lethbridge than in Calgary, if your mines are there, should it not?

A Assuming all other factors are equal or offset each other, that would be the case. By the other factors I mean there is involved the cost of distribution in Lethbridge as against Calgary, but assuming all those other factors cancel out, yes.

Q If it so happens that the comparisons in Lethbridge are more favorable to coal than they are in Calgary and if it is of importance to keep the Lethbridge market, should not your comparative figures be concentrated on Lethbridge?

A I do not think so. If it is important to keep Lethbridge, it is tremendously more important to keep Calgary. After all



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Lethbridge is only 16%.

Q Have we not got to the stage that we have to keep our existing market? It is not going to do you any good to establish some competition in Calgary, if it loses everything else on the line.

A When the problem comes up to making a rate, retail rate, it might develop that you would want to make a different rate and the Board might want to make a different rate in Lethbridge than in Calgary. I do not know.

Q You suggested a block rate for the price of gas at the well too.

A Yes.

Q I am going to come to that.

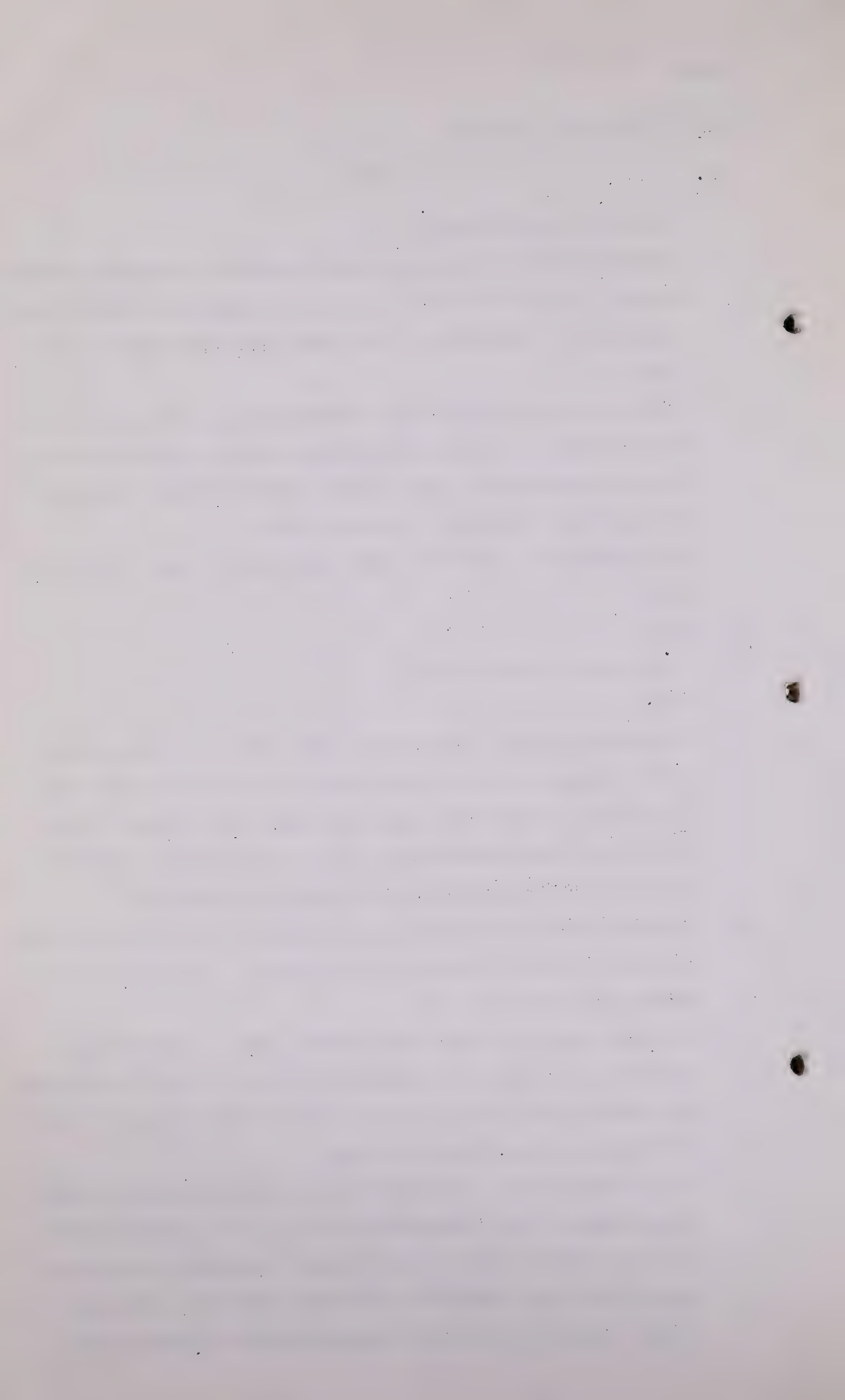
A Yes.

Q Eliminating that, and supposing the Board does not approve of the suggestion of a block rate at the well head for gas, depending on how it is used, then I say does it not follow that it is imperative to keep all of your market and you have got to consider what will happen to Lethbridge.

A I cannot go along by saying it is imperative to keep all your market. I say it is certainly desirable. It depends on so many other factors.

Q I do not want to go over that spiral again. We have gone over it ad nauseum. I suggest to you this, that this theory of a block rate for gas at the well is just designed to meet that spiral proposition is it not?

A It was designed to recognize two factors, as I say, one was it was shown in my Submission Number 1, or I tried to show that the costs go down as the volume increases. (2) We are saying that with regard to the market there is a decline value, domestic up here and commercial and industrial and





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if you were designing a rate to meet those two factors as you normally would do in my opinion I would block it. That is my opinion.

Q Just keep to conditions at Lethbridge because I think this is the crux of this whole thing. I do not want to go over all that we went over before. Have we not agreed that you have to try and keep your existing market unless you get something to replace it, otherwise the cost per MCF is to go up?

A Well your cost per MCF might go up but that does not necessarily say what will happen to the profits.

Q I understand.

A Yes.

Q Not only will the costs go up but the expenses of handling each MCF will go up won't it?

A That is saying that the cost per MCF will go up.

Q I do not mean the cost to the consumer but I mean the actual cost . . . .

A Yes.

Q To get it and the handling it and all that.

A That is right.

Q And the more it costs to handle it the less value it has at the well. That is right is it not?

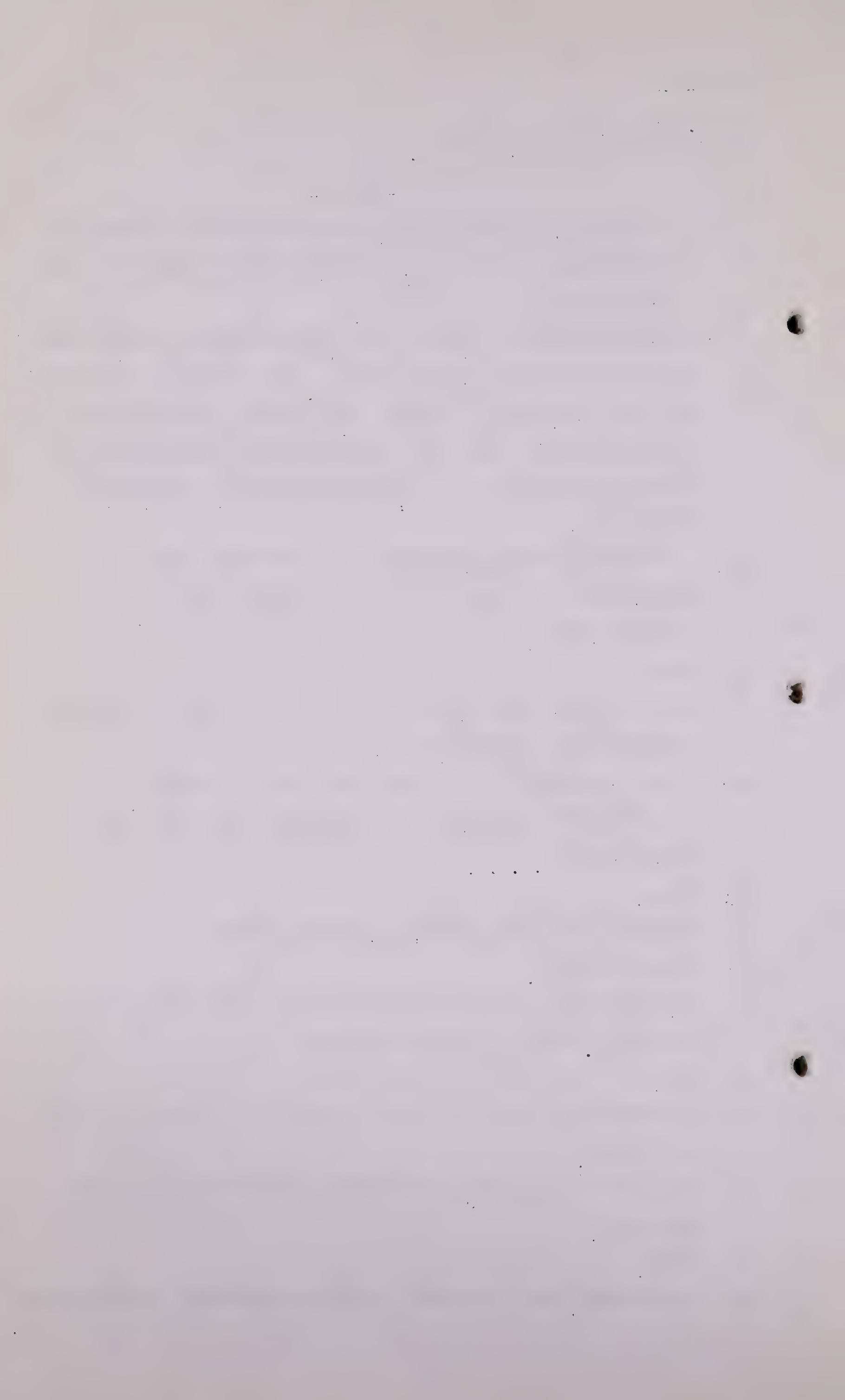
A No.

Q I thought you deducted those services to find out what it was worth.

A The more it costs to handle it the less value it has at the well.

Q Sure.

A I am sorry, that is right. The less remaining value it has.



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Q Yes. Then it follows the more you get off the line, Lethbridge or any other place, the less value your gas has has it not?

A That is right. If all the intervening costs . . . . .

Q So that if you want to keep your value of your gas, then you have to keep Lethbridge, haven't you?

A I would say yes.

Q You would say so?

A Yes.

Q Will you now agree with me that if any comparison is more favorable to coal in Lethbridge, that is the key place and we should discuss Lethbridge?

A No. You might discuss Lethbridge and you might do something which would completely upset Calgary, which is your major market.

Q I have got you this far haven't I, that if coal is competitive now in Lethbridge and you have got to keep Lethbridge and the competitive price in Lethbridge marks the upper ceiling that you can go to, I think that is what you told me before, in any place, your whole proposition falls to the ground does it not?

A I do not think so, Mr. Fenerty.

Q Well that is a matter for argument.

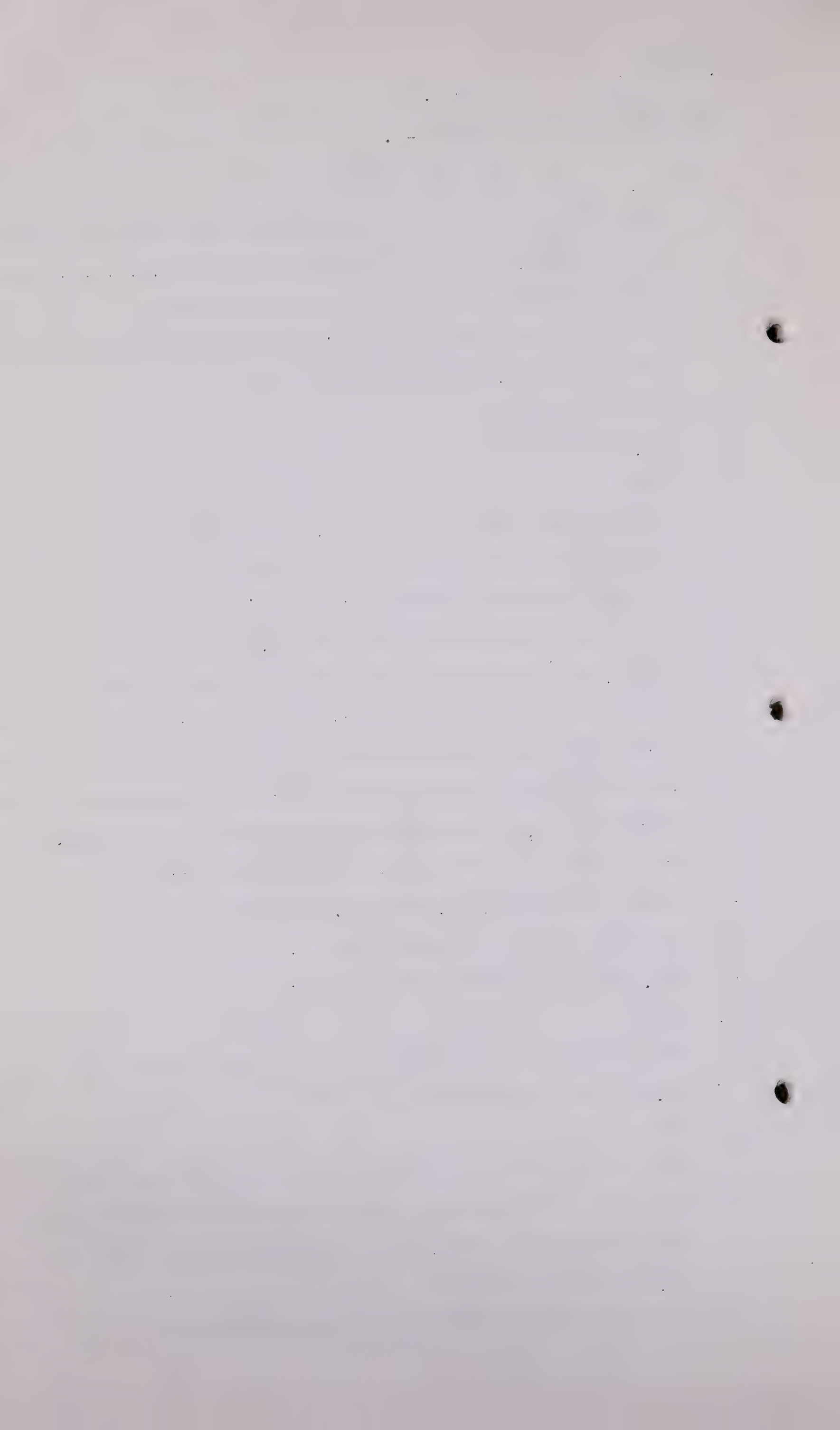
A Yes.

Q You cannot tell me anything about what the result of a comparison in Lethbridge will result in?

A No.

Q You do not know, for instance, whether or not any actual commercial and industrial coal is not only competitive but it is maintaining and it has maintained its position for some years against gas.

A No, I do not know the situation in Lethbridge.

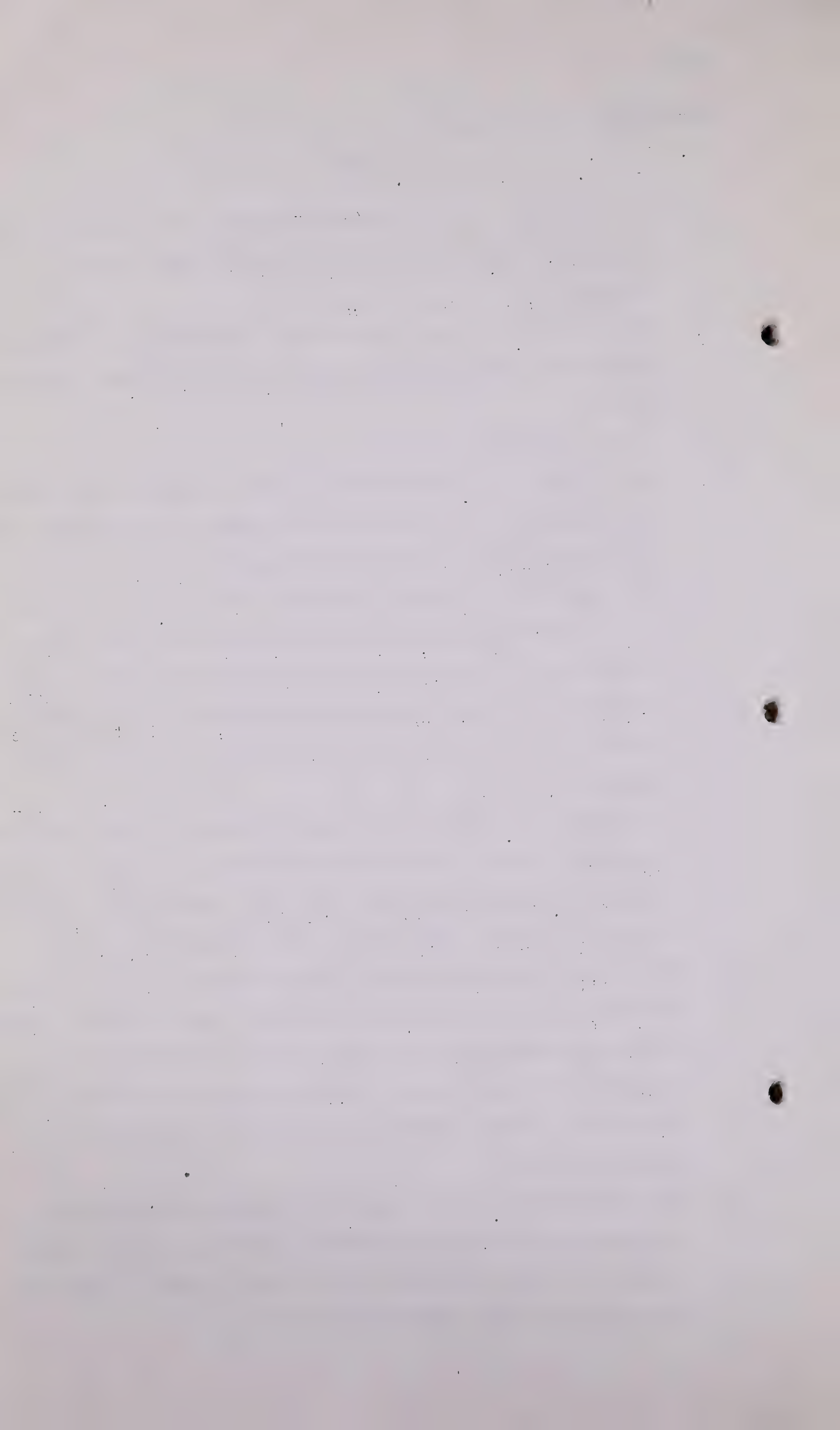




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- Q If that is so, there is some indication that there is a very delicate balance between coal and gas is there not?
- A It might be.
- Q If that is so and you have to keep Lethbridge, you have to think a long time before you disturb that balance, is that not so?
- A I would think so.
- Q And so does it not come again to what I said, without finding out the situation in Lethbridge you cannot tell whether or not your comparison of coal is of any value.
- A No, I would say this, Mr. Fenerty, that if that situation as you describe it is true in Lethbridge and I have shown the situation as I analyzed it for Calgary, now if that indicates a change in Calgary then you might want to go and determine whether or not the same change ought to be made for Lethbridge or not.
- Q The thing I am asking you to agree with me on, as a general principle, is that under the conditions we have now, I have gone all over them with you, that your yardstick is the most competitive point and not the least competitive point?
- A No, I think your yardstick would have to be, after looking at the overall picture and taking your largest market. Then after you determine how it affects your largest market, you can see how it applies to the smaller pieces remaining. That is the way I would analyze it and that is the approach I have taken here.
- Q You see nothing in the suggestion I have made that from beginning to end, with the market you have, if you do not keep it all you inevitably have a rise in cost of handling an MCF and you see nothing in that?



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A I am only trying to say that my approach to the problem would still be the same. I would determine the facts for Calgary, that is your big market.

Q Yes.

A And having determined those and decided on certain results, I would see how they applied to the smaller parts.

Q Let us follow it one step further. If you found that had the result of the loss of the Lethbridge market, would you then make another increase in the price per MCF applied to Calgary to take it up?

A You might.

Q You might?

A Yes.

Q If you determine that the cost per MCF in Lethbridge, in comparison with coal, was substantially greater than it would cost for coal, would you make a reduction in the price of each MCF to the Lethbridge consumer?

A I might.

Q To bring him down to the ceiling?

A I might want to do that.

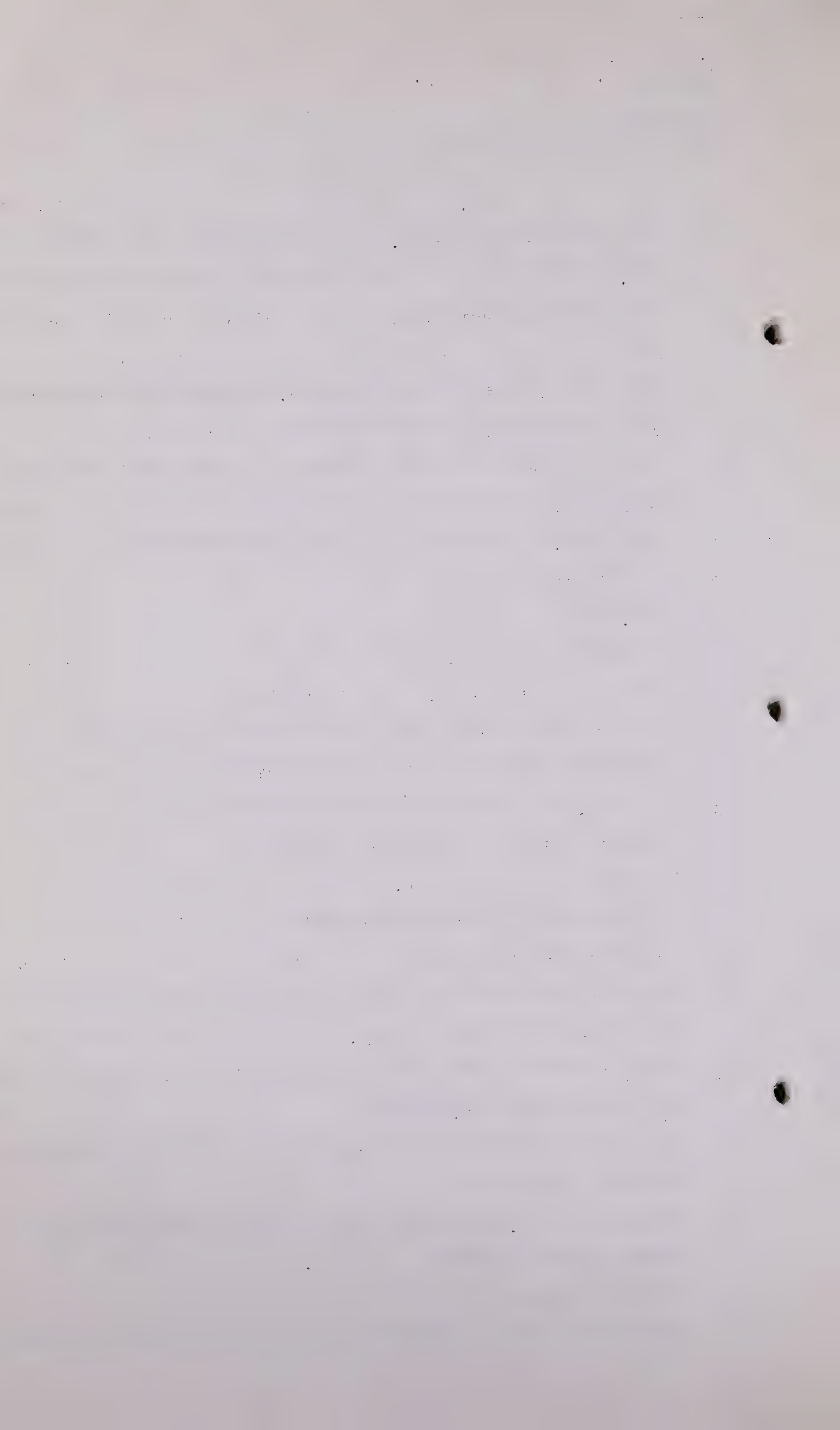
Q So that this theory of competitive fuels might result in a deduction in the cost of gas to the man at the end of the line, to whom it cost more to deliver it and an increase in the price of gas to Calgary.

A Yes, that is entirely possible, that is under the assumptions you have indicated.

Q That might be the logical result of this comparative fuel theory, might it not?

A That is right.

Q Less to the man in Lethbridge and more to the man in Calgary?





T-2-13

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A That is right.

Q Do you think that is very practical?

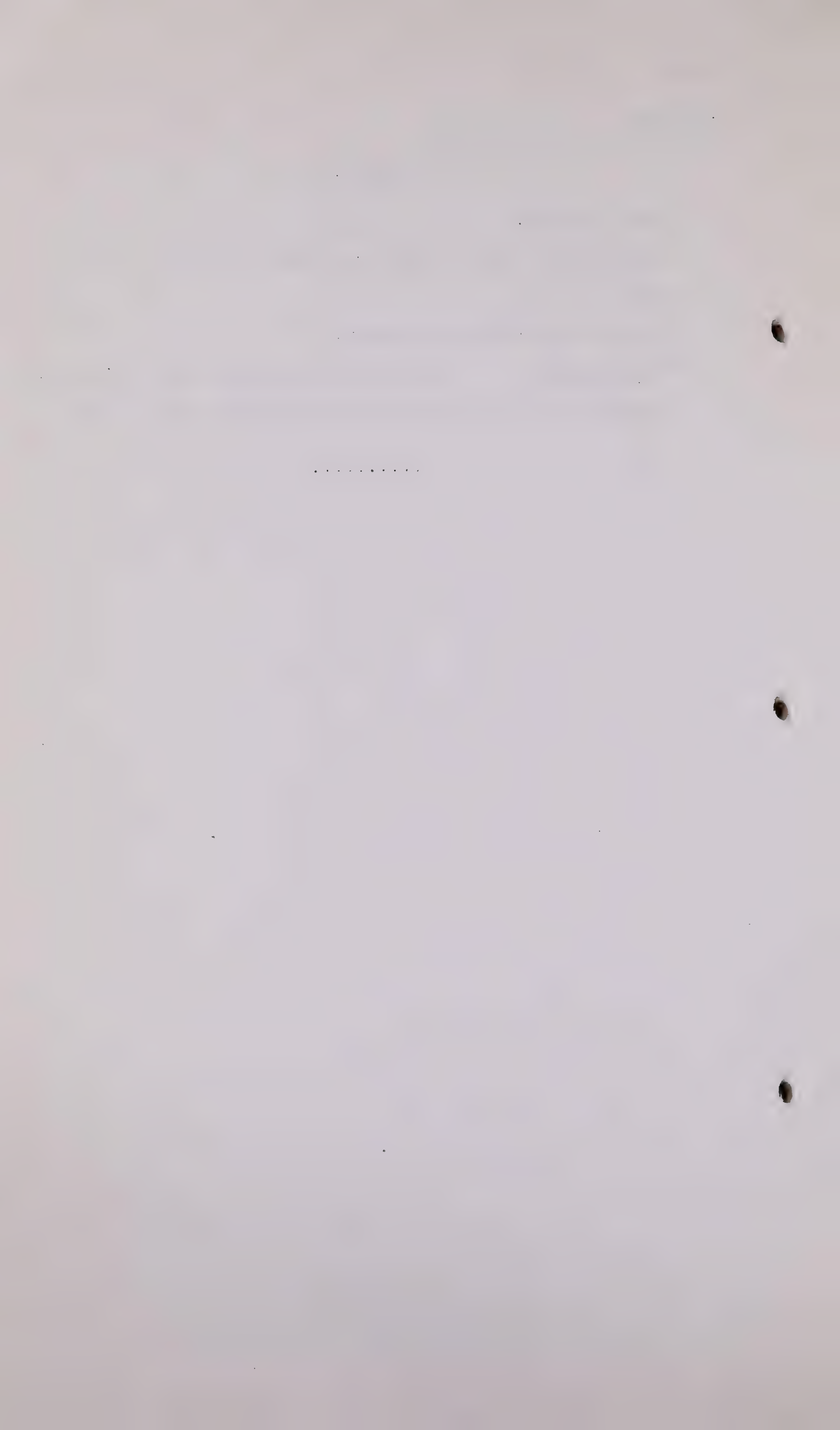
A Yes.

Q You have not lived in Alberta.

THE CHAIRMAN: Now we will adjourn until 2 o'clock.

(At this stage the hearing was adjourned until 2 P.M.)

.....



H. Zinder,  
Dir. Exam. by Mr. McDonald.

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MR. McDONALD: Mr. Chairman, in view of the information obtained from the Gas Company over the noon hour we have, Mr. Zinder has revised his figures on Pages 11, 12 and 13 of his Exhibit and I have, I am tendering the figures we obtained as Appendix 4 to the Exhibit, that is a statement showing the average prices of customers and actual sales per customer, domestic, commercial and industrial. I have a limited number of the pages I referred to and I will distribute these.

THE CHAIRMAN: And they will still be a part of Exhibit 135.

MR. McDONALD: Yes, Mr. Chairman.

DOCUMENTS PRODUCED HERE MARKED AS  
PART OF EXHIBIT 135.

H. ZINDER, having been recalled,

Examined by Mr. McDonald, testified as follows:

Q MR. McDONALD: If you would just go ahead, Mr. Zinder and deal with this.

THE CHAIRMAN: You will have other copies available, will you, Mr. McDonald ?

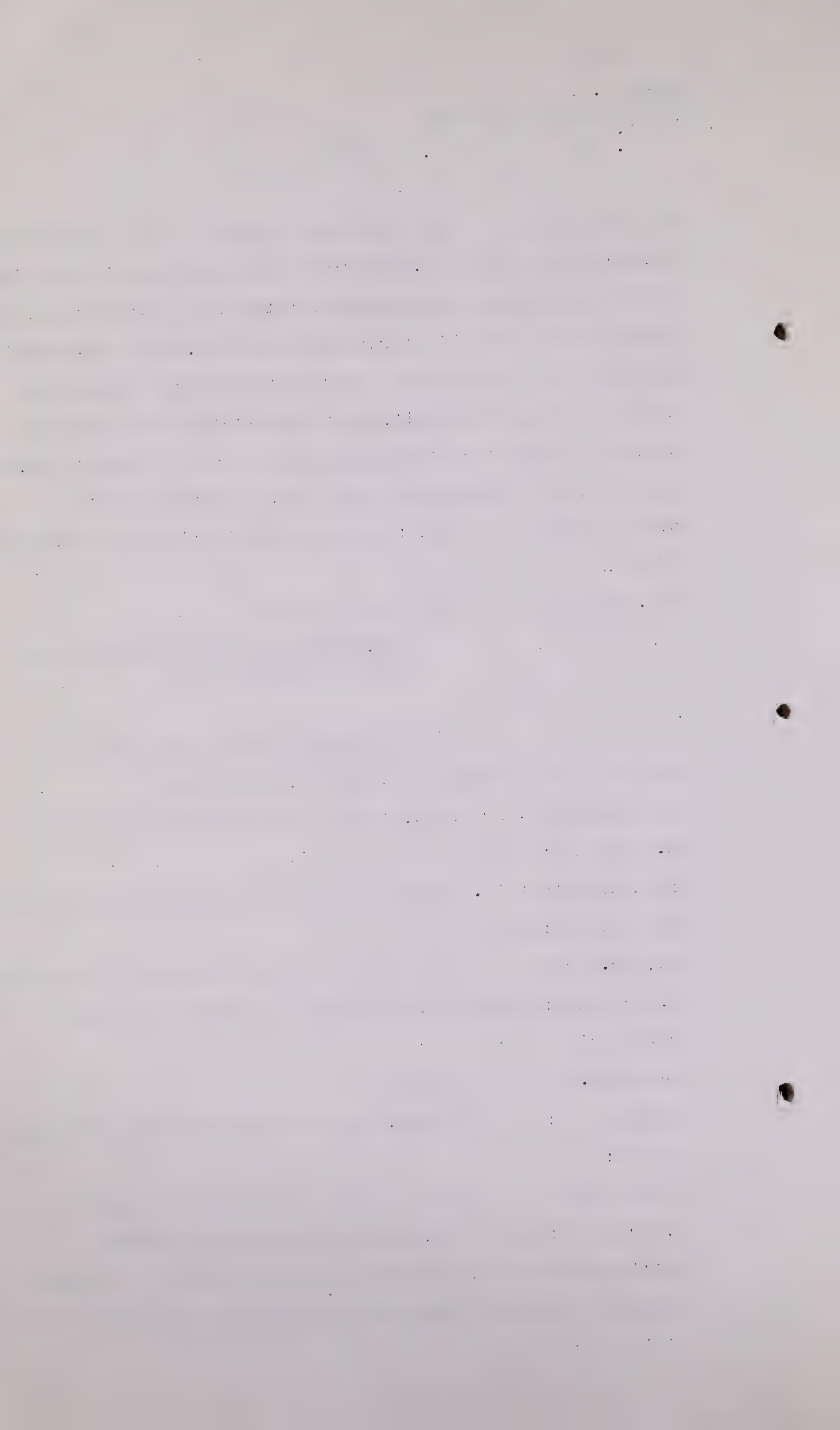
MR. McDONALD: Yes, I will have others made if necessary or the original copies could just be amended, the first documents.

THE CHAIRMAN: Oh yes.

WITNESS: You want me to read these facts into the record ?

MR. McDONALD: Yes, and then the change on Page 11.

A Starting on Page 10, the second line from the bottom, "The experience of the Canadian Western Company", it would eliminate commencing from that point down to the end of the





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paragraph at the top of Page 11, take that out down to the end of the paragraph at the top of Page 11.

On Page 11, commencing under the head, "Domestic Use", the first several sentences would read as follows:

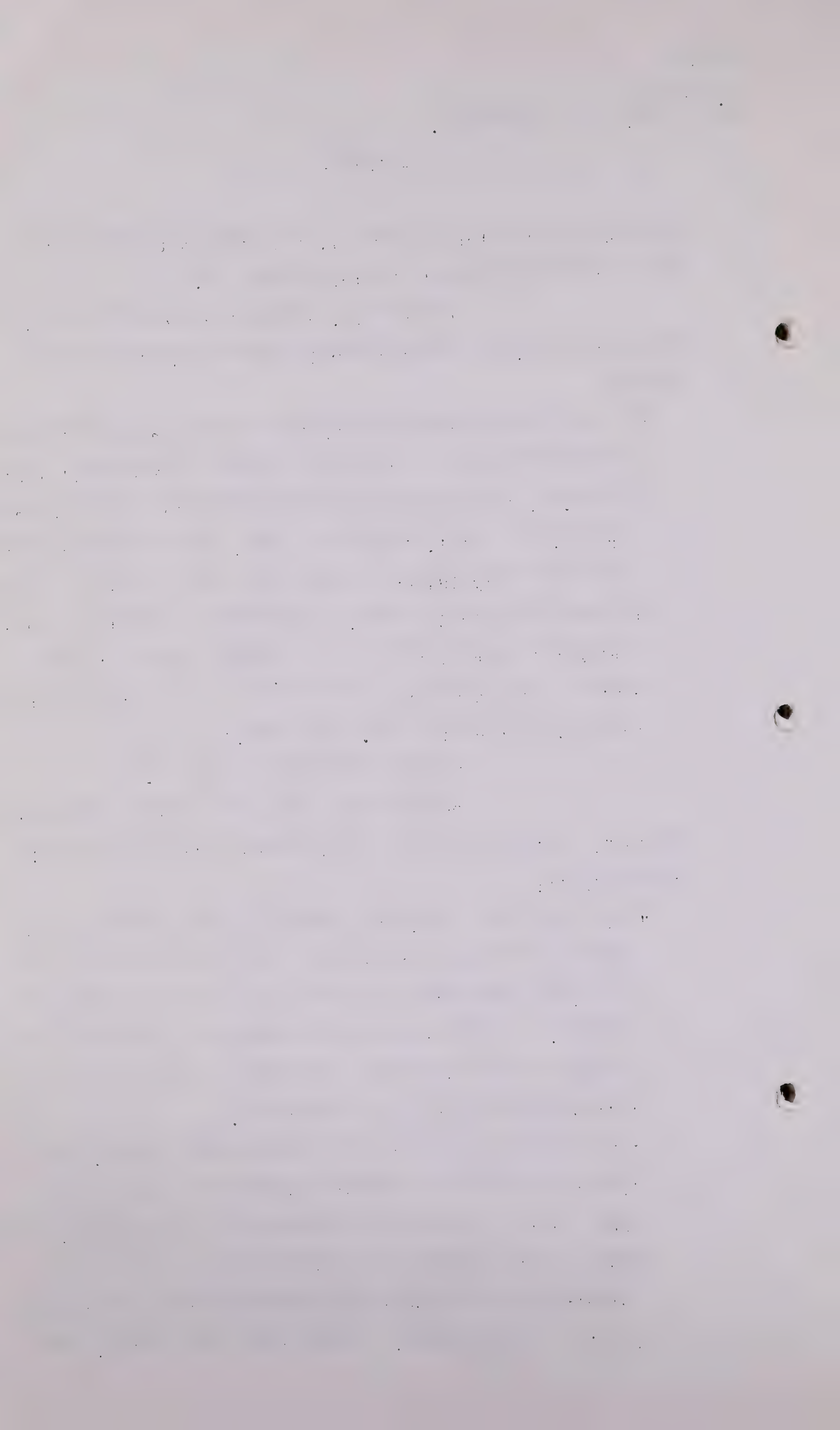
"In 1937' rather than in 1929 'the average consumption per domestic consumer of Canadian Western was 204 MCF,' instead of 218.51, 'and the rate for most domestic use was 33 cents per MCF. In 1941', instead of 1944, 'the average domestic sales were only 184 even though the rate had been decreased to approximately 27 cents, a decrease of almost 18 per cent. During this period there was a slight increase in the per cent of total domestic customers who were heating customers, from 87.6 per cent to 88.2 per cent."

No other changes on Page 11.

On Page 12, under the heading, "Commercial Service", I will read the first paragraph with the revised figures in it:

"There has been a material change in this class of customer over the past 15 years. In 1940 Canadian Western had 3,213 commercial customers, who used an average of 738 MCF. By 1943 the number increased to 3343 and the average use per customer increased to 1156 MCF', that is "increased" instead of "declined".

'There was no change in rate during this period. By 1944 the number of commercial customers increased to 3368 and the average use increased to 1,164.28 MCF. How much of this increase in average use was due to war activity and how much to the reduction in rates is not possible to determine. During this same period, 1940



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to 1944, the company added only 254 commercial heating customers or approximately 8.5 percent of the total commercial customers already served in 1939."

MR. McDONALD: 1940 ?

A In 1940, I am sorry. No other changes on that page.

On Page 13, commencing at the second paragraph in the middle of the page, the revised figures would read:

"In 1936 Canadian Western had 122 customers which were classed as industrial, whose average annual use was 9,836 MCF. The rate for this service was the same rate as for all other service starting with a top block of 33 cents per MCF and going down to 15 cents per MCF for all uses in excess of 5,000 MCF per month. Under this rate, by 1938 the company reported 137 industrial consumers, whose average use was 8,206 MCF."

And no other changes.

Q MR. McDONALD: Now Mr. Zinder, this morning, or rather Mr. Chairman, I will put it this way Mr. Fenerty left with Mr. Zinder a statement with prices and calculations regarding one thing and another, of coal relative to the market, the Calgary market. Now we are not in a position, Mr. Chairman, to check that or to deal with it. I think it is a matter of direct evidence by someone being called by the City rather than an attempt to cross-examine or deal with it.

MR. FENERTY: I will not attempt to press him. I will not ask him anything more about that.

MR. McDONALD: It involves making analyses of valuations and we are not sure of the basis on which they were put in.

MR. FENERTY: I think Counsel can get together and find





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out what it is, can get together and decide on what we can put in, without calling the original evidence in each case. I will try and work it out anyhow.

CROSS-EXAMINATION BY MR. FENERTY: Cont'd.

Q Now Mr. Zinder, just a word or two on this coal problem and then I want to go to another feature of this.

I spoke to you of the possibility of coal interests taking steps to get household markets, possible competition, which will increase competition ?

A Yes.

Q I just want to read to you a sentence which indicates to me there is a real possibility of this. This is from the brief of the Western Canada Bituminous Coal Operators Association to the Royal Coal Commission, Page 32 of the Brief and it says:

"The household market presents a great opportunity for modern merchandising methods provided suitable equipment is available for the automatic burning of coking coals".

He is dealing with household matters now ?

A Yes.

Q MR. McDONALD: Did you say "stoking" or "coking" coals ?

MR. FENERTY: "Coking coals".

Q MR. FENERTY:

"Coal must, to retain its position, let alone improve it, be offered in this atmosphere by utilizing modern methods and it must be sold by efficient merchandising and advertising."

I take it you know that, probably some of the present gas markets is also due to efficient advertising



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and efficient merchandising, of the Canadian Western Natural Gas Company ?

A I would assume so, Mr. Fenerty.

Q You have seen some of these statements, showing substantial sums of money which may have been devoted to those methods, have you not ?

A I do not recall that I have.

Q But all I am getting<sup>at</sup>/now is, you can see this position, that there is a disposition on the part of the coal operators to try and improve their position in the domestic market ?

A I do not doubt that they are.

Q Yes, and I would take it that on this basis of competitive fuels, that if for any reason the price of coal fluctuates, you would have to adjust your gas prices, would you, to come within that top ceiling ?

A You would have to adjust your gas prices provided that at the time they were equal.

Q Yes.

A That is in all respects. If you are at a point of equilibrium between coal and gas.

Q But if they were away down you would not have that market ?

A That is right.

Q But as to the uses which are competitive now or which might become competitive later, with a rise in the price of gas, in order to be consistent you would have to adjust your price on that gas every time coal prices fluctuate ?

A I have indicated here that is the policy of some gas companies with regard to large industrial rates.

Q Now I want you to turn to another feature of your report. This "block rate", page 9, at the bottom of page 8 and the top of

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page 9:

"This margin varies over the range of uses of natural gas. Thus, both from a cost and a value approach to the problem of fixing a price of gas at the well it would appear that a flat price per MCF is inconsistent with the facts and that a block rate of some form would be more nearly in harmony with the characteristics of service and of the market."

Now I want you to tell me if my understanding of that is correct, that what you have in mind, is a price at the well head, one price at the well head for gas, we will say, for that portion of the gas which finds its way into the domestic market and is consumed in houses and another price we will say for the gas which is consumed in the large manufacturing plant, is that the "block method" ?

A I would not go that far, Mr. Fenerty, in exactly setting up the rate exactly that way.

Q No, but is that the idea ?

A That is the theory.

Q That is the theory, that is the principle ?

A That is the principle.

Q Now you know of course, that we have differential rates now charged by the Canadian Western, do we not ?

A I understand so.

Q In other words they get their gas at so much a thousand no matter what it is used for and they get for that gas different amounts per MCF or per thousand, depending upon whether it goes into the householder's furnace or the Burns & Company plant ?

A That is right.



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Q Yes, and by the way is this a new theory as to the price of gas ?

A I would not say so.

Q What ?

A It is not.

Q It is not ?

A No.

Q It has been applied, has it ?

A Yes.

Q I just wanted to know, I did not know about that.

A Yes.

Q Assuming that there has been a disparity of that nature in the past permitted by the Utility Board, so far as the price of gas is concerned, it would seem, would it not, that the difference in rates permitted to the Gas Company is because of the difference in service performed by the Gas Company in distributing to householders as compared to distributing to the large industrial firm ?

A I assume that there is a difference justifying a difference in rates, yes.

Q You say so ?

A Yes.

Q I mean we are on common ground and we will agree that for the little bungalow on the North Hill it is going to cost more per MCF to give it gas than it is to give it to the Imperial Refinery, say ?

A Yes.

Q Using the extremes each way ?

A Yes.

Q And so far as the bungalow on the North Hill is concerned, the





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gas at the well head has no value without that complimentary distribution system of the Canadian Western Company has it ?

A Yes, it would. I think I have indicated that there are other factors indicating a value to it. It has a commodity value. There may be other markets which might give it a value.

Q It has no value in any market if it cannot get to that market ?

A Oh yes that is right.

Q Yes.

A It has no value in a market that it cannot get.

Q And it cannot get to that market on the North Hill without the Canadian Western distribution system, that is right is it not ?

A Yes.

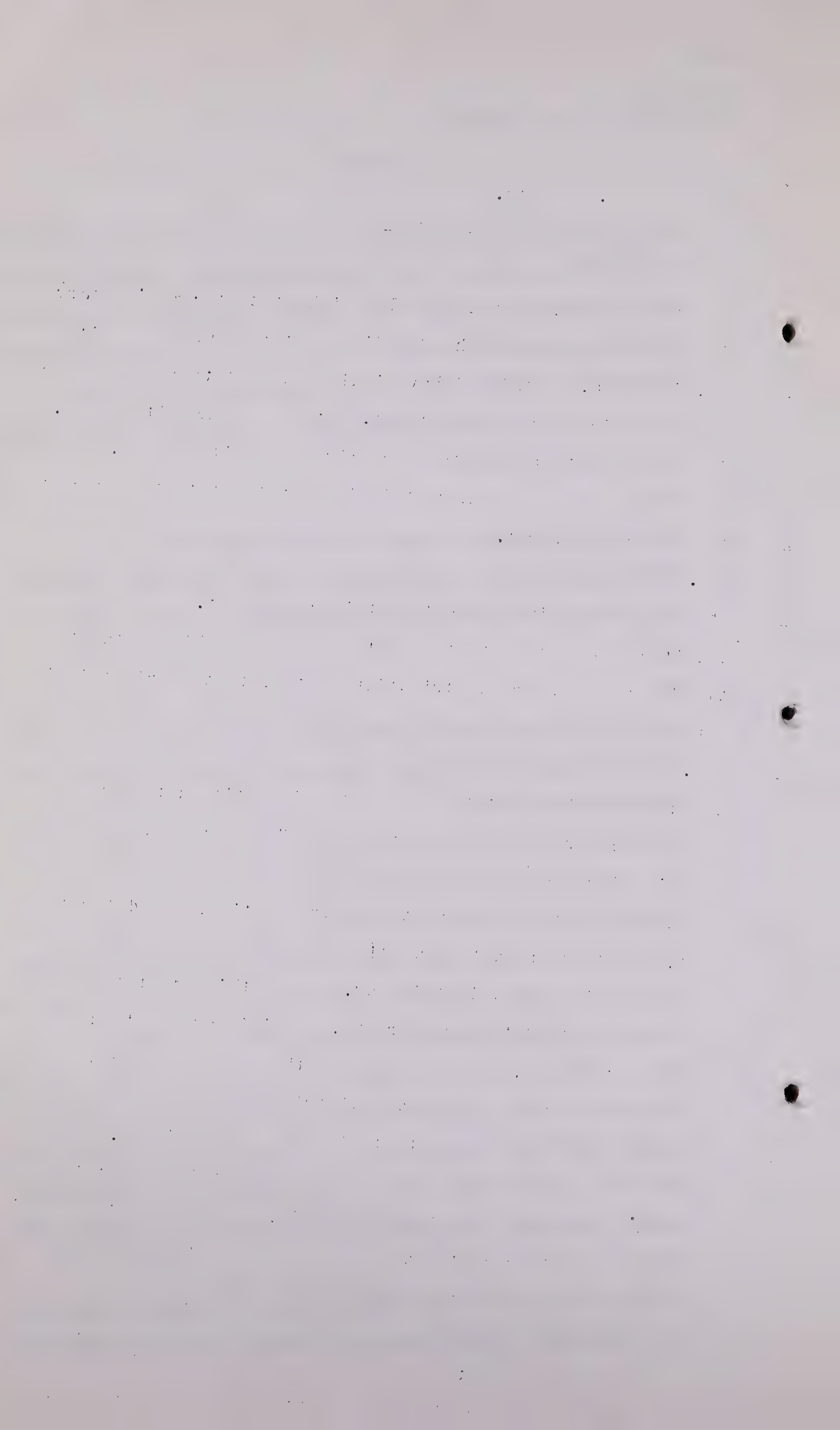
Q And do you think that the well owner is entitled to more for one particular MCF of gas because the Canadian Western has a distribution system ?

A I did not get the first part of your question, could I get that, would you read the question ?

Q I will put it to you in this way, do you think that the well owner is entitled to more for one, we will say one thousand cubic feet of gas, that he sells at the well head because the Canadian Western has created a distribution system ?

A Well I think my answer to that will have to be "yes". The fact is that the value of gas to that householder is a certain amount. The cost of getting it to him, as I was saying here, there is a certain cost and I am saying that the remaining amount represents the remaining value of the gas at the well head.

Q Now let us take the other end of it. I thought you said you were arriving at your figures by taking from some figure the



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cost of the service to get it to the market, scrubbing and all those things, you took them all, does not it follow that that gas is worth less if it needs a lot more services and expenses put on it ?

THE CHAIRMAN: At the well head.

MR. FENERTY: At the well head, yes, oh at the well head.

WITNESS: No. The question is "less than what".

Here is the problem, if I might answer your question this way, Mr. Fenerty. You say that because of the added cost of getting gas to the domestic householder it would be worth less than to the, - I am assuming less than something, I am assuming less now than to the Imperial Refinery we will say where the cost per unit is considerably less. Now the value to the Imperial Refinery is considerably less too and therefore the remaining margin is greater than the value of the gas at the well head for the domestic consumer.

( Go to Page 5002 )





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Q I am not sure that you have not run me down now.

A May I ask now less than what.

Q This intrinsic value you have got some theory that gas has got some intrinsic value and you proceed to seek its value by finding what expenses you have in connection with it ?

A Let us say its maximum value.

Q All right I suggest to you that gas that is used in private houses on your theory is worth less than well head gas because of the added cost of handling. I am just trying to look at the other angle of your theory. I am not saying I agree with it. I am trying to test yours.

A I think I have tried to explain my theory. I could repeat to this extent and say this that my position is that gas has a value at the wellhead. One way of trying to arrive at that value is determining a competitive level in the market in which it is used and deducting the intervening costs.

Q And another way of helping you to determine its value is to find out how much it will cost you to get it in place ?

A Yes I have to find out what it will cost from the wellhead to the market.

Q If it will cost you a whole lot more to get to one market than to another it has less value in that market ?

A No, not necessarily because it depends upon the original value to begin with, the second market.

Q I will leave it because I cannot follow you and that is because I have not devoted all my energies to these ways of reasoning. We will leave that though. If you were to go into this theory of differential rates and so on and if you were to carry it out to its logical conclusion you would find that it costs more to deliver gas to a house in one end of the street than



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to a house at the other end depending upon which way the service main ran ?

A That is possible.

Q You would have a longer service main and it would cost a fraction more ?

A Right, yes.

Q And to complete and be logical you would have to carry out this adjustment with every house that had gas in it to be absolutely complete and logical ?

A To carry it out to its ultimate refinement, yes, but I would not say necessarily that is completely logical.

Q And can I say using the words of our old friend Euclid it would be an absurdity ?

A Following it out to its ultimate would be absurd.

Q Let me follow that, and in our school days was that the way in Euclid we tested a proposition to find out its logical conclusion as an absurdity. Do you remember that by any chance ?

A No, I do not, but I would say this Mr. Fenerty, the theory of differential prices I consider to be sound. You have to determine your classes of service, getting them all as nearly alike as you can in one class. Now no two are identical or would be very rare that any two are identical. If you could determine the cost to any two and sometimes you cannot do that. That is down to any two specific customers.

THE CHAIRMAN: The old story of the street car fare all over again ?

A Yes, I would say so Mr. Chairman.

Q It costs approximately the same amount to travel half a block as it does to travel through the whole city. The only logical





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thing to do.

Q MR. FENERTY: I want to discuss with you another consequence of this block rate. The possibilities we are discussing here as you know involve the shutting in of the gas cap. The use of the production from the gas cap in times of peak load, you know that ?

A Yes.

Q The possible compensation of the Royalite in the time for some shutting in of the gas cap and the use of gas from other wells both Royalite and others during the time of small load ?

A Yes.

Q And I gather the idea of your theory of block rate is that if it should turn out that the coal competition is such that you do not dare to interfere with the industrial rates or large commercial rates, there is still a place where you can interfere and that is with the household rate. That might be the result of it ?

A Yes it is possible.

Q That is what you have in mind when you advance that theory.

A Mr. Fenerty, I might say as far as I - I have nothing in mind. I think I said the last time I was here I did not take it for example that any increased price at the well means necessarily any increase in retail prices so I have nothing in my mind. I do not know what that situation is.

Q But you have got to get it somewhere. You cannot get it from the commercial or the industrial consumers and on competitive prices you can get it from the householder. That is the only place you can go ?

A No you have omitted as I see it, Mr. Fenerty, if the Gas Company can absorb it.

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Q That is true, yes, but apart from the Gas Company absorbing it that is where you would head to the householder ?

A Yes.

Q Just let me follow this and if the application of that block system did result in an increase to the householder, say for instance for the sake of illustrating it, we arrived at a rate of one cent at the wellhead for gas used by large industrial users and arrived at three cents for instance for gas used in the household. I am taking those figures because they are not anything suggested by anybody. It is just to have figures like that. It is true is it not the reason we have a peak load is because of the winter problem, our heating problem. Times of perhaps extreme cold. We have that great variation.

A That is right.

Q And that variation is not anything like as extreme as in the case of industrial users as it is in the case of householder use or commercial blocks and so on, apartments ?

A I would not think so.

Q And then if you apply this block system and you arrive at a higher price for gas used by householders and you find that the Royalite gas from the gas cap is going to be burned when the householder is increasing his heating, burning more gas, it follows that the Royalite is going to get a greater price for its gas than the other people had whose gas was used in the summer.

A If the rates were applied that way that would be so. I have not suggested it should be applied that way.

Q And you would have the Royalite Company getting paid for not using its gas and when using it getting the three cent rate





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and the other people not getting paid when using gas because they are getting the one cent rate. Do you think that is practicable with the conditions we have got ?

A I have not followed through as to the mechanics of what it would have to go through in applying a block rate. I visualize it essentially in this way. The deliveries are made to the Gas Company at a certain point. Actually I think it is three points. Now I would in applying this theory or this method, I would take the total deliveries to the Gas Company in any month and apply to that for billing purposes a certain block rate which would give you a certain revenue and then that revenue would be in turn distributed among the producers on a basis of - some basis - of their contribution at that period to the total use. It might be you might do it on a monthly basis or you might want to do it on an annual basis. I have not gone through it.

Q When you were speaking about block rates they were just - well I say, just thinking out aloud - you were talking of the general principles that might be applicable to some set of facts ?

A Yes.

Q But you made no study of the local conditions to see if they had any application to the facts I am now presenting to you ?

A No, I have made no study to see how I would carry it through in practice in this particular situation.

Q So you did not come here today to say that suggestion might have any value at all under the conditions we have here today ?

A I say it is sound in principle and might have some value.

Q But you have told us about generally speaking and supply and demand and all these things are sound in principle but not

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The first part of the report deals with the general situation of the country and the progress of the work. It is followed by a detailed account of the various projects and the results achieved. The report concludes with a summary of the work done and the plans for the future.

The second part of the report deals with the financial aspects of the work. It gives a detailed account of the income and expenditure of the organization and shows how the funds have been used. It also gives a statement of the assets and liabilities of the organization.

The third part of the report deals with the administrative aspects of the work. It gives a detailed account of the organization of the work and the methods used to carry it out. It also gives a statement of the personnel of the organization and the work done by each of them.

The fourth part of the report deals with the social aspects of the work. It gives a detailed account of the social work done by the organization and the results achieved. It also gives a statement of the social conditions of the country and the needs of the people.

The fifth part of the report deals with the educational aspects of the work. It gives a detailed account of the educational work done by the organization and the results achieved. It also gives a statement of the educational conditions of the country and the needs of the people.

The sixth part of the report deals with the health aspects of the work. It gives a detailed account of the health work done by the organization and the results achieved. It also gives a statement of the health conditions of the country and the needs of the people.

The seventh part of the report deals with the economic aspects of the work. It gives a detailed account of the economic work done by the organization and the results achieved. It also gives a statement of the economic conditions of the country and the needs of the people.

The eighth part of the report deals with the cultural aspects of the work. It gives a detailed account of the cultural work done by the organization and the results achieved. It also gives a statement of the cultural conditions of the country and the needs of the people.

The ninth part of the report deals with the religious aspects of the work. It gives a detailed account of the religious work done by the organization and the results achieved. It also gives a statement of the religious conditions of the country and the needs of the people.

The tenth part of the report deals with the political aspects of the work. It gives a detailed account of the political work done by the organization and the results achieved. It also gives a statement of the political conditions of the country and the needs of the people.

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applicable to the special conditions we have and you proceed to get away from that on account of the special conditions here. You have done that in your report ?

A I started out with the principle and then apply it to the fact and sticking to that principle as far as you can you may have to do certain averaging and may have to depart from it a bit but I stay as close to it as I can.

Q If you are going to be logical and one thing more in using the block system, you would have to consider not only the kind of uses but the place of use, would you not. I mean you would have to apply it to the distribution, the thing we were talking about this morning ?

A No, I think as I outlined it the way I would have to start to apply it anyway would be to take and set up a rate schedule having, let us say, three blocks. Just as an illustration the first block of that rate say might be of some price, let us call it price "A". I am not going to name any figure, and the size of that block would be designed to be roughly proportioned. I say roughly, or have a relation to the total amount of gas used or sold rather for domestic use, let us say domestic use. The second block would be proportional in size and have a relation to the total amount of gas let us say for commercial and industrial. The third block would be all over the amount included in the first two blocks. The price for each block would be different and going down. Now I would not make any attempt and I do not want to be misunderstood as recommending that that block has to vary each month with exactly the number of MCF sold for that purpose. That is not done in rate making. In rate making frequently you have to make estimates as to approximately what the various classes of





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use will take.

Q All right, I am not going to labour those points. I think I can perhaps deal with them in argument. I am going to ask you on one point. Has this discussion we have had at least indicated to you that there are many factors that you should give further consideration to before you can say whether or not coal is competitive now with gas ?

A My answer, Mr. Fenerty, that nothing that has come up so far leads me to believe that I would alter any of the conclusions or statements I have made in the submission.

Q For instance if it were possible to ascertain the relative efficiency and if it should turn out that coal was relatively equal in efficiency to gas in these various scales of operation, that would change the picture completely would it not ?

A Yes it would.

Q And while you have your own opinion you just do not know about those things ?

A I have answered you just as I believe.

Q And one more thing. If you do not know what the result would be of these things, will you agree with me that there is no excuse for altering the existing balance. You have got to have a good reason for it have you not ?

A I do not know that we can say or I would say that I have not a good idea of what the result would be. For example Mr. Fenerty, I pointed out here that at the time the rate in Calgary was 33 cents they had approximately 87% heating saturation and the heating saturation when the rate went down to 25 cents was not materially different. Now the consumers in Calgary, I think the real answer is, the consumers in Calgary are using gas in a large measure for heating



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purposes. It is a high degree of saturation. The proof of the fact would be that gas is if anything more than competitive and I think that it is for the ways I have shown in this submission.

Q We are in agreement that you do not know, you suspect something about relative efficiencies. That is right is it ?

A That is right.

Q You suspect and a change or a reversal in the efficiencies might alter the entire picture might it not ?

A Yes.

Q Then you are proposing to say that an increase can safely be made based upon what you suspect might be the fact. Is that what we are really coming to in the end ?

A Let me put it this way, based upon the facts as I have put them forth in this submission, -

Q But not exact knowledge ?

A No, I have not exact knowledge as to the efficiency.

Q And all you can say is if the market is lost as I have suggested and can be shown as lost in Lethbridge and the thing does not work out all you can say is, I told you I did not know those exact elements and I am glad to have known you and good day. Is that the position ?

A I object to you Mr. Fenerty putting any words into my mouth.

Q Is that not all that would be left for you to say ?

A I do not know what I would say if that happened.

THE CHAIRMAN: Thanks Mr. Zinder. Have you any arrangements amongst yourselves ?

MR. CHAMBERS: I might suggest that the Gas Company go ahead. I have no particular<sup>quarrel</sup> with this examination and it would depend upon to a certain extent what the others do.

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H. Zinder,  
Cross-Exam. by Mr. Steer.

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THE CHAIRMAN: Are you ready Mr. Steer ?

MR. STEER: Yes.

CROSS-EXAMINED BY MR. STEER:

Q You told us Mr. Zinder that your qualifications were originally electrical engineering ?

A That is right.

Q But thereafter you did do some work in the study of public utilities ?

A That is right.

Q Have you had any experience in coal mines ?

A I have not.

Q Have you had any experience in the distribution of gas for fuel purposes ?

A No operating experience, no.

Q No operating experience. Have you made any detailed examination of the distribution system of the Canadian Western Company in Calgary or elsewhere ?

A Not in Calgary.

Q I said the distribution system of the Canadian Western Company in Calgary or elsewhere ?

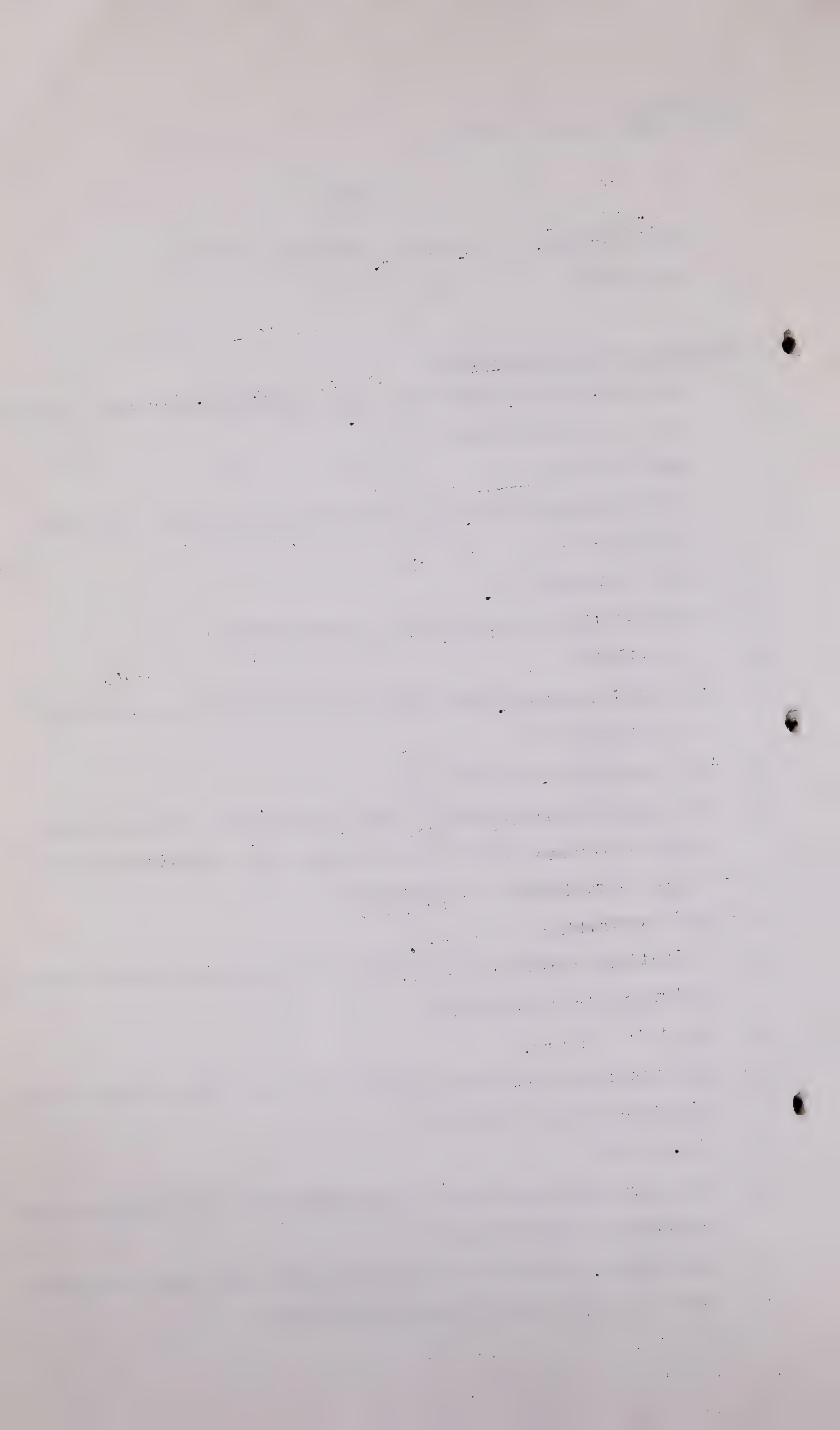
A No.

Q Have you made any study of the conditions under which coal is produced in this Province ?

A I have not.

Q Have you made any study of the conditions under which coal is marketed in this Province ?

A Only to the extent of the inquiries that were made as to the prices of coal and the cost of delivery.



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Q You came here to give this report, and you asked for certain information from certain people, who, up to date, have not been named, am I right in that?

A Yes.

Q And it is on the information you got from those unnamed sources that you have prepared this report, is that right?

A Well, with the one exception, the one named source is the one that your company supplied to us.

Q My learned friend, Mr.Fenerty, pointed out to you this morning that those figures which you say you got from us really came from Mr.Denton's original report, have you checked that?

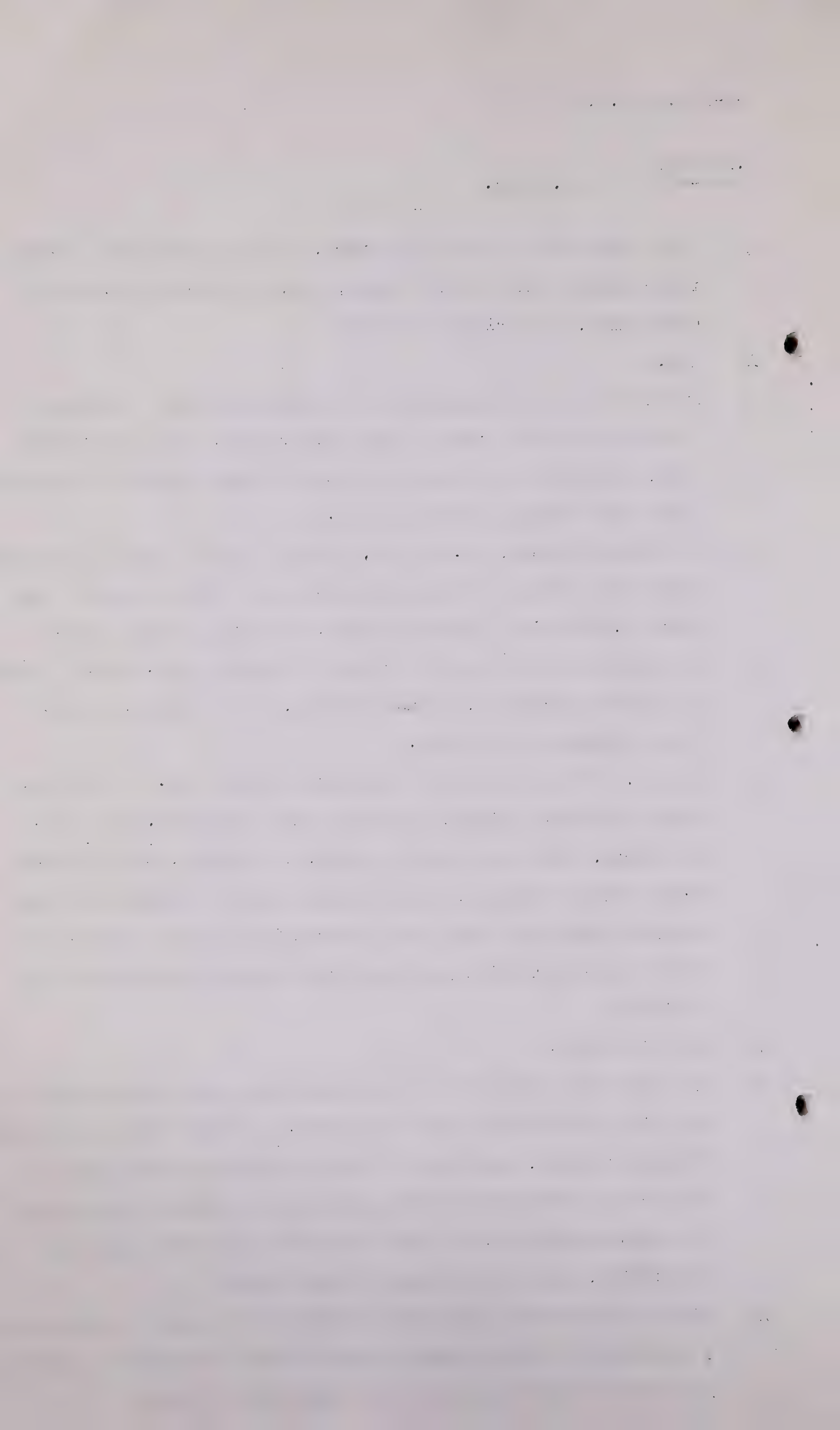
A The figures that I was referring to a moment ago, that I said we received from you, I was speaking, for example, of the last information received.

Q Oh yes. We have not got any quarrel with that. Now then, apart from those figures which we have furnished, and that, of course, from your point of view, is hearsay, and you must accept their accuracy, you have got certain information from unnamed people and upon that information you have drawn, or from that information you have drawn certain conclusions, am I right?

A That is right.

Q And the only conclusion I think that you have expressed up to date is a conclusion that this Board, at least that the Public Utilities Board, in fixing a rate in Calgary, should not go higher than 33 cents domestic, might go a little higher than 33 cents commercial, and what it should pay with regard to industrial, you do not know, is that right?

A With this possible exception, I think with regard to industrial, I indicated it would appear at some point an increase could be made without getting beyond the competitive level.





H. Zindor,  
Cross-Exam. by Mr. Steer.

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Q And another point, you have stated in your opinion that such increase could not be made, is that right?

A Could not..... My statement was, could not be made without facing the possibility of losing some load.

Q Yes. Now those are the only opinions that you have expressed, is that right?

A I would say essentially, as far as the first part of this submission is concerned, yes.

Q Well, we will confine our attention to the first part?

A Yes.

Q Now I want you to deal with that word "essentially". Have you given us any other information, have you given us any other opinion than the one that I have outlined to you?

A Well, in saying essentially, Mr. Steer, I may have expressed some opinions about other matters of <sup>a</sup>secondary nature, leading to those conclusions, and as to what I had in mind, I would have to go through this word for word to decide whether any other opinions entered.

Q Well, I won't ask you to do that. Essentially, that is what you are here for, is to give that opinion?

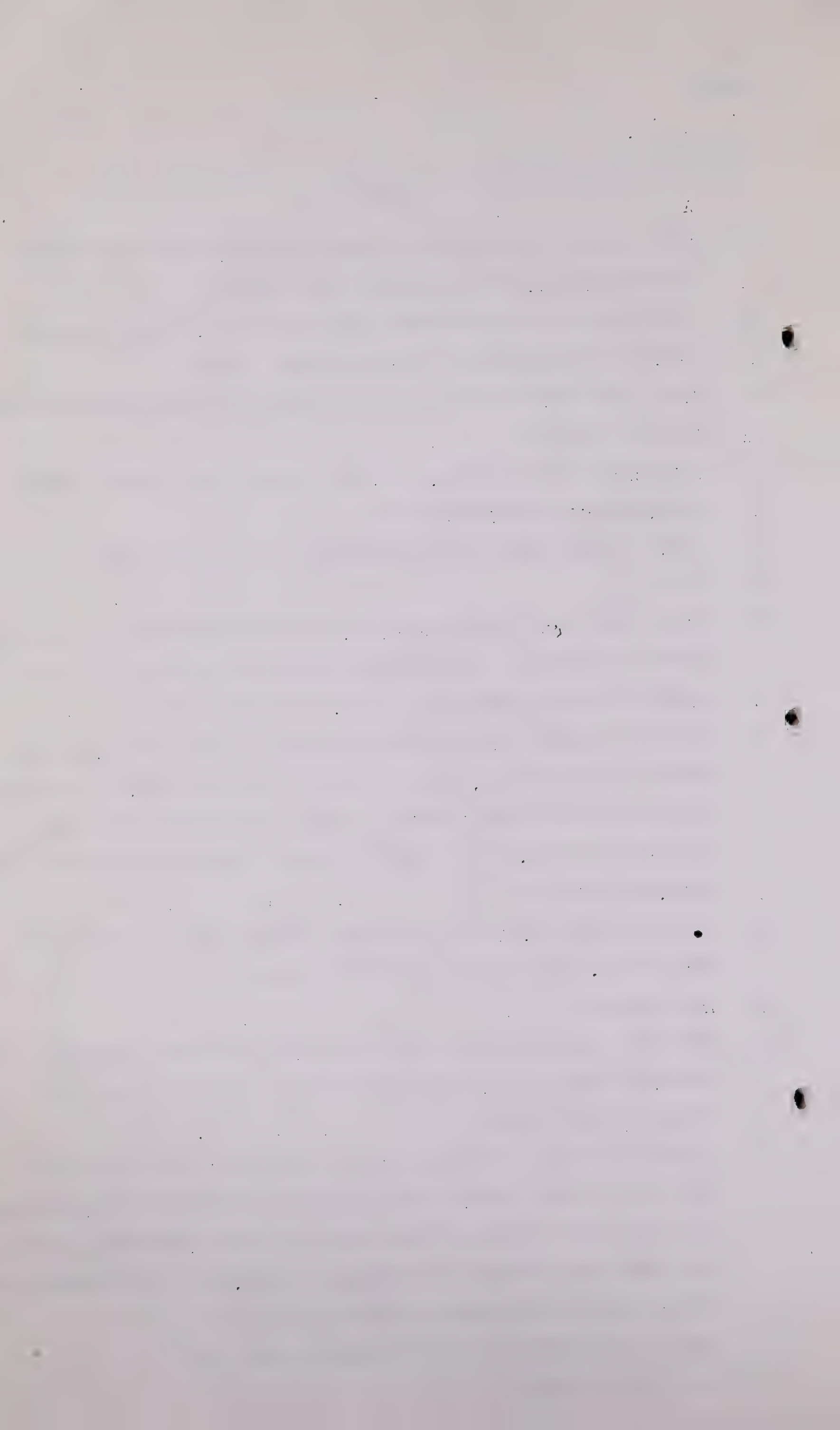
A I think so.

Q And that opinion is based on facts which you have acquired, knowledge that you have acquired in the way that I have outlined, is that right?

A I think you must add also in there, Mr. Steer, the fact that I did, while I did acquire the information indicated in the manner that you have outlined, I have also had some experience, or rather have done some reading and studying of figures, and information with regard to this general subject matter.

Q That is your experience with figures, isn't it?

A Yes, that is right.



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Cross-Exam. by Mr.Steer.

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Q Your experience is with paper work, whether it is in this aspect of the question or in the aspect of the question upon which you testified previously, I am suggesting to you that your experience is just that, paper work?

A For the past, let us say, particularly ten years or so.

Q And apart from that you were engaged in the electrical business?

A That is right.

Q Yes. Now I am putting this to you, that the soundness or otherwise of that conclusion that you have expressed, depends entirely upon the accuracy of these figures?

A Oh yes, I would think so.

Q Yes. And if there is any reason to change those figures then your whole conclusion disappears?

A It might.

Q Yes. Now you said that the upper limits of the price of gas for domestic use, as I figured from your report, is 56 cents, 53.6 cents, I beg your pardon, page 6, am I correct?

A That is with regard to, with regard to the Drumheller coal, with particular reference to Drumheller coal, yes.

Q That is the Drumheller coal. Now if a person is going to use coal in Calgary, what coal does he use?

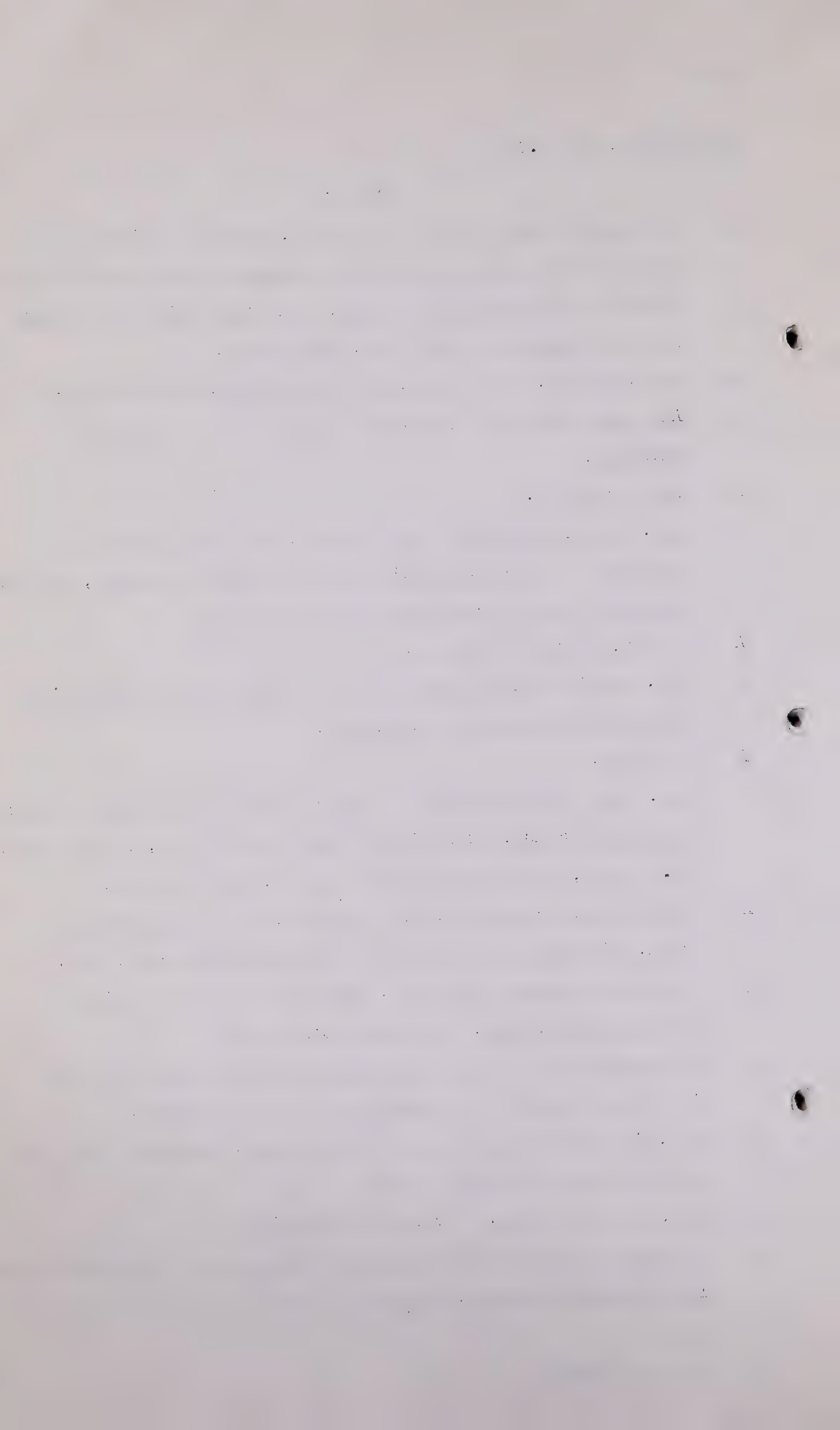
A My information is that at the present time Drumheller coal is the coal that is predominantly used in Calgary.

Q Yes. And apart from that you do not know. Somebody told you that you use Drumheller coal?

A Yes, that is right. I made an inquiry.

Q I think you agreed that you would throw out of the window your Priddis coal yourself, because it was not available for the city?

A That is right.





H.Zindor,  
Cross-Exam.by Mr. Stoor.

- 5014 -

Q You did that?

A Yes.

Q Did you ever hear of people using bituminous steam coal for the domestic load, that is required in cities like Calgary, Edmonton and Lethbridge, did you ever hear of that?

A What kind of coal? You say bituminous steam coal?

Q Bituminous steam coal?

A No, I have not.

Q All right. On the basis of using Drumheller coal, you say that the people in Calgary might be asked to pay 53.6 cents per MCF for gas, is that right?

A That is right.

Q Why did you put a limit of 33 cents on it, when you were coming to your conclusion as you expressed it this morning?

A Well, I might say that I did that from a superabundance of caution, plus one other point.

Q Yes?

A And that is this, taking the figures of the Gas Company, possibly I felt that knowing, or having knowledge that there was still a very high degree of saturation of heating customers with 33 cents, that I felt satisfied that it could certainly go up at least to that point.

Q I see?

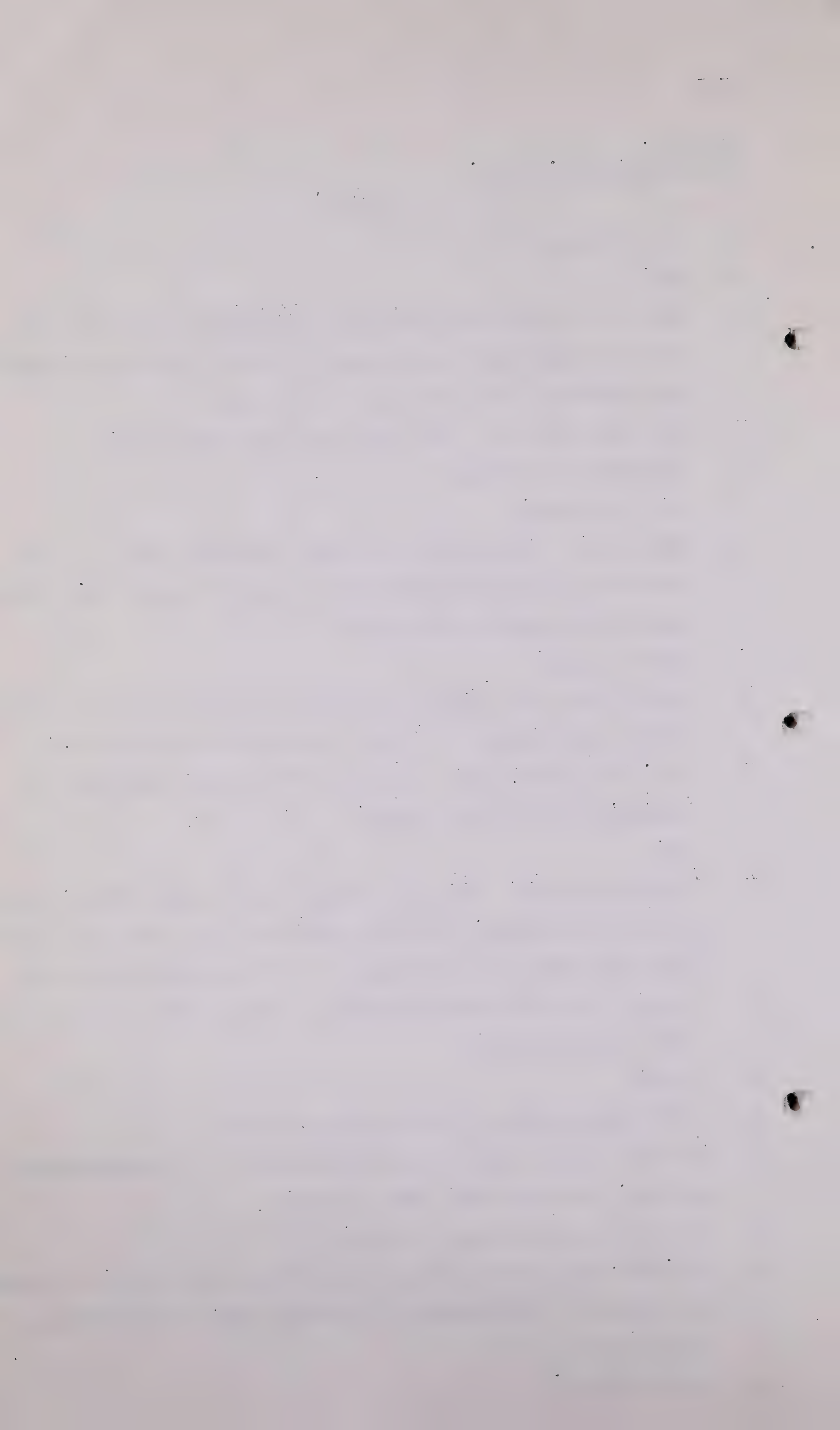
A I did not say that it could not go higher.

Q So that you cut down 20 cents an MCF out of a superabundance of caution, is that right, first of all?

A I think you might call it that.

Q Yes. So that you are going to use 20 cents out of 53.6 to measure the amount of caution which you should apply in determining these rates?

A That is right.



H.Zindor,  
Cross-Exam. by Mr.Steer.

- 5015 -

Q Why weren't you so cautious when you came to the commercial and light industrial, because your report shows 35 cents as the comparative cost of Drumheller coal, and yet you say to this Board, that for this commercial and light industrial, it should equal 33 or 34 cents. Now why the lack of caution there?

A Well, I did not approach it, Mr.Steer, on a basis of deducting a ~~slight~~<sup>certain</sup> amount which might be called the maximum figure shown by these three types of coal. Again I would say that I was influenced by the fact that 33 cents was an actual rate in effect in Calgary, and at that rate the Gas Company did enjoy a very high saturation of heating customers.

Q Your theory is this, 53.6 cents is the competitive price of gas with respect to Drumheller coal, and you say that if the market is fully saturated, that you can get prices right up approaching that 53.6 cents, before you interfere with consumption, isn't that your theory?

A That is correct, on the average.

Q Now, you have got 53.6 cents, on your figures as the competitive price for gas relative to Drumheller coal, on what you would call a fully saturated market, haven't you?

A Well, 53 cents.....

Q Haven't you got a fully saturated market?

A In Calgary now?

Q Yes?

A My information is that you do.

Q Yes. And over this system haven't you got a very largely saturated market, do you know?

A I am not familiar with regard to Lethbridge and some of the other communities.

Q All right. We will deal with Calgary. You have got a fully





H.Zinder,  
Cross-Exam.by Mr. Steer.

- 5016 -

saturated market in Calgary, and you have got 53.6 cents as the price competitive with Drumheller coal, and yet you say out of a superabundance of caution, 33 cents. Now why didn't you go all the way and say that the people of Calgary could be charged 50 cents?

A I have stated here - I might add, Mr. Steer, that I recognize that we are dealing with averages. Now, that 53.6 cents is based upon a calculation of 55% efficiency for domestic and 75 for..... that is for coal, and 75% for gas. Now, I do believe that those efficiencies make a valid comparison, but it must be recognized that there might be an occasional installation in which the coal efficiency may leave 60%, as well as an occasional installation where the coal efficiency would be 40%. Now if you are going to maintain the entire market you would have to take the highest efficiency of any user in Calgary. I am not saying it is necessary to maintain the entire market.

Q Well, it is a strange thing to me, and if you have got any explanation of it I would like to have it, as to why you deduct 20 cents in the case of the domestic, and you say to the Board to put the commercial or light industrial at 2 cents, below, or even 1 cent below. Now if you have got any further explanation that you have got to give on that I would like to have it.

A Well, first of all, I have not said to the Board that they should put the gas price at any point in the City of Calgary. I would like to make that clear.

Q And before you ever did tell the Board what your opinion of the price was, you want to make a lot more study of this situation than you have made up to date, isn't that right?

A Before actually fixing the rate for the Gas Company, yes.



H.Zindor,  
Cross-Exam. by Mr. Steer.

- 5017 -

Q So that now you said that you did not tell the Board that they ought to fix 33 cents domestic and 33 or 34 cents industrial, light industrial, and you are going to say what you did say. I would welcome your explanation, Mr.Zinder.

A Well, I think in answer to Mr. McDonald's question, the best I can recollect now, I simply said that based upon these studies, in my opinion, the price of domestic gas could go as high as 33 cents, if not higher. I think I added if not higher. And it would still not risk losing any substantial portion of the market.

Q Anything else? What did you say about the light industrial?

A I think I made essentially the same statement.

Q You made essentially the same statement?

A Yes.

Q Now, were you influenced in that judgment because those prices have been charged previously?

A I think that had an influence in that judgment, yes.

Q So you went back and you said, "Now, they have sold gas at 33 cents, and they got certain demands for it, and they can put it up there again," is that right?

A That was a factor, yes.

Q But you have not yet explained to me, - if you have it has evaded me - you have not yet explained to me why you use 20 cents margin of safety in one, and a 1 cent margin of safety in the other?

A Well, I said, in addition to the other factors, I indicated, Mr. Steer, I think I answered 2 statements. One was, I would simply call it, and I still say, a superabundance of caution.

Q Why weren't you superabundantly cautious when you were dealing with the commercial, the commercial rate is more sensitive on your statement than the domestic market?





H. Zindor,  
Cross-Exam. by Mr. Steer

- 5018 -

A I think because, Mr. Steer, I was materially influenced by the fact that that rate and that price was once in effect, and you had the saturation indicated.

Q You did not see any saturation of industrial rates, did you?

A Not industrial. I was speaking of commercial, and I thought you were speaking of commercial.

Q Do you see any saturation of the light industrial and commercial market in Calgary?

A I have not any figures on saturation with regard to what you call the light industrial.

Q Or commercial either?

A Yes, on commercial I have the figures your company has submitted.

Q Well, what is the saturation of the commercial, what figures are you referring to now?

A I will get them in just a moment. I am referring to Schedule No. 1, in the submission, Mr. Steer, per cent heating saturation as shown in the column headed "Commercial".

Q Oh yes?

A The total heating customers and the total commercial customers and I have run a percentage.

Q Yes. Now then, there was a remark you made this morning to this effect, if I got it correctly, you said that all you have tried to show is that with gas at 25 cents and the comparable cost of coal at 35 cents, an increase in the price of gas to 30 cents will not disturb the market. Did I get that answer correctly?

A I do not recall using those particular figures, Mr. Steer.

Q Well, I made a note of the figures. Did you make any answer like that?

A Oh, I made an answer of that kind by way of illustration to Mr. Fonerty, yes.



H.Zinder,  
Cross-Exam.by Mr.Stoer.

- 5019 -

Q Yes?

A That was an illustration.

Q And that does represent your view?

A Yes.

Q Yes. And those figures were not intended to have any relation whatever to the facts, were they?

A No. I used them simply for the purposes of illustration.

Q Well, let us assume for a moment, well, let us take your actual figures, you say that for domestic purposes \$8.30 for Drumheller coal, and the relative efficiency of 55 and 70% respectively, am I right?

A 55 and 70, correct.

Q And you have got an equivalent price for gas of 53.6 cents?

A Yes.

Q Yes. Now I ask you, supposing the price of Drumheller coal is \$4.00 a ton instead of \$4.30, what effect is that going to have.....

MR.BLANCHARD: \$8.30.

Q MR. STEER: \$4.00 a ton instead of \$8.30, what effect is that going to have on your 53.6 cents?

A It will reduce that by just about one-half.

(Go to page 5020.).





T-3-1 3 P.M.

H. Zinder,  
Cross-Exam. by Steer.

- 5020 -

Q And suppose the relative efficiencies are just the reverse and you have got 70% coal and 55% for gas, where do you get your prices?

A I would have to figure that out, Mr. Steer.

Q You get it away down below 25 cents wouldn't you?

A You are starting down below 25 cents to begin with.

Q You start below 25 cents because you take the price of coal at \$4.00.

A That is right.

Q What do you mean by "the efficiency of fuel"?

A I mean the relationship of the B.T.U. input to the B.T.U. you might say output of the boilers.

Q You mean the percentage of B.T.U. content that is usefully employed and not wasted?

A I would say so, yes.

Q That is it?

A That is right.

Q And you told us that you have at least read, although you have not investigated, you have at least read about cases where the efficiency of gas would be 40%?

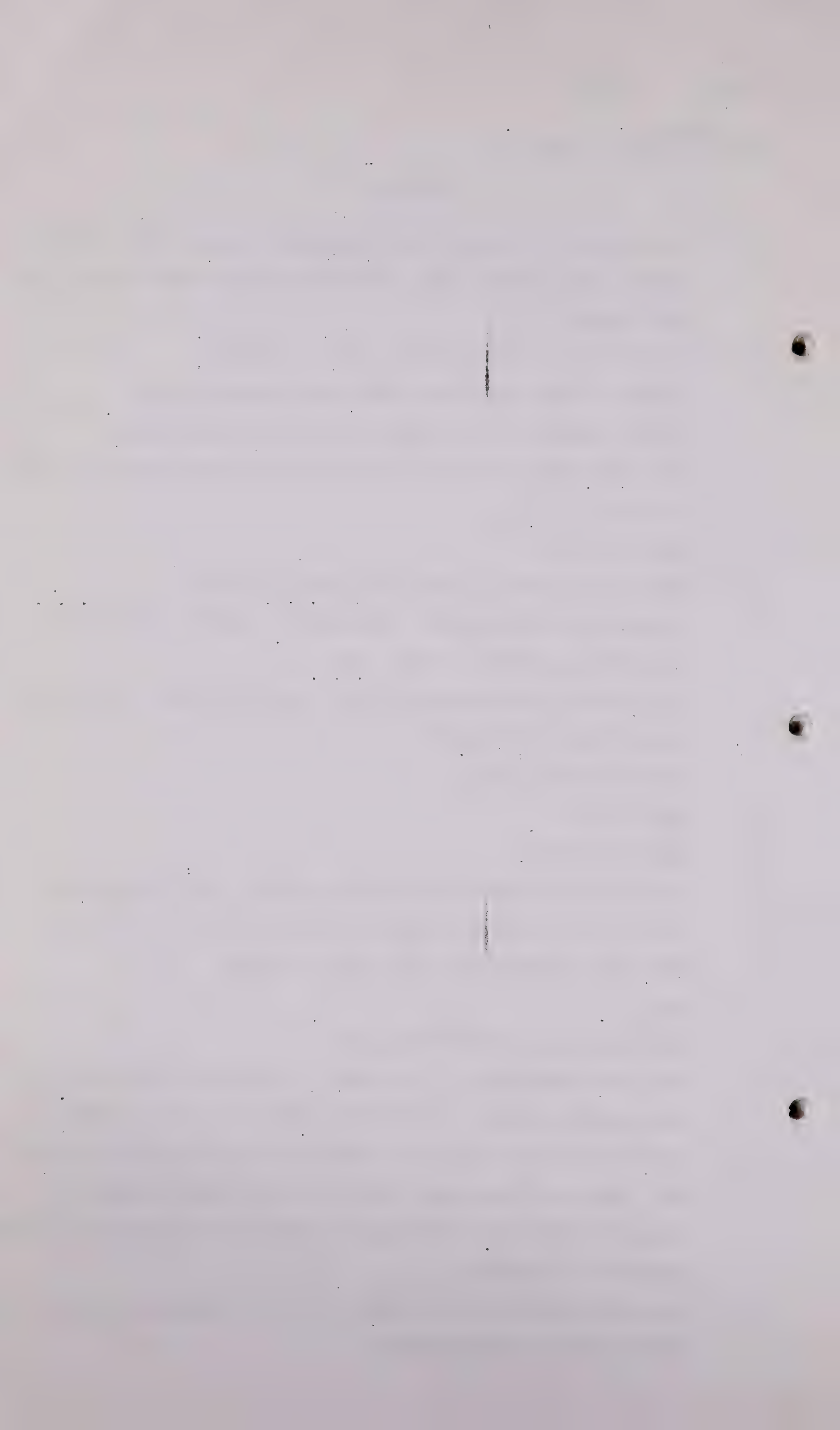
A Yes.

Q And 30%. Gas, I am talking about.

A I do not recall that I have read of such low efficiencies for gas, Mr. Steer. I have for coal. It might be 40%.

Q What do you say to this statement, do you agree with it or not, "The early American Gas Association requirements in respect to domestic gas range top burners specified a thermal efficiency of 30%."?

A You are speaking of gas ranges. I was thinking in terms of house-heating installations.



H. Zinder,  
Cross-Exam. by Mr. Steer.

- 5021 -

Q Do you agree with that?

A I would agree with that for gas ranges or the efficiency of them.

Q I do not want to take a long time about it but so far as house heating is concerned, you have read about 40%?

A That might be. I do not recall it offhand.

Q Did you ever make a test?

A No, I have not.

Q Do you know how to make a test?

A I would not say I could without some study.

Q You would have to read quite a lot about it, just the same as the rest of us?

A That is right.

Q To test the efficiency?

A That is right. It is not a simple matter.

Q You never made a test as to the efficiency of coal, I presume?

A No.

Q And similarly I suppose you would have to investigate how to go about that.

A No, I have made no investigation.

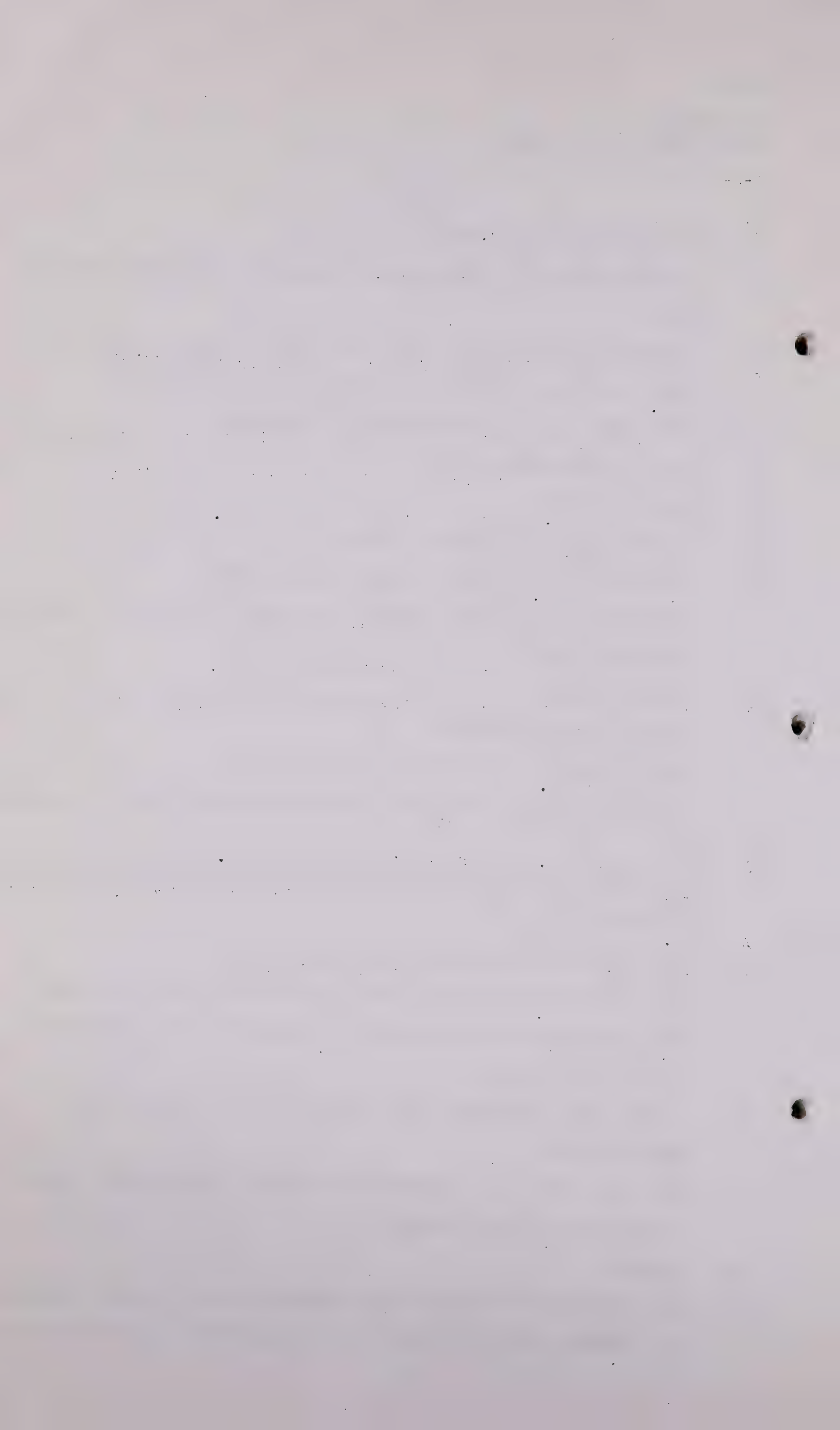
Q Have you made any investigation of the modern appliances that are used for the purpose of increasing the efficiency of coal as a fuel?

A I have seen literature from time to time in the Trade publications.

Q You know that coal operators are making a determined effort to improve that efficiency?

A Oh yes.

Q Now I am not sure whether you agreed with my learned friend, Mr. Fenerty, this morning when he suggested to you that there





H. Zinder,  
Cross-Exam. by Mr. Steer.

- 5022 -

was a lot more scope for the improvement of efficiency with respect to coal than there was with respect to gas.

A I thought I agreed with him, Mr. Steer.

Q You agreed with him?

A Yes, sir.

Q Now it is conceivable having that fact in mind that the proposition that he put to you this morning is correct that either now or within a short period we are going to have furnaces which will give you a higher efficiency for coal than you can possibly get for gas.

A Well, I would agree that it is possible but what the period of time might be I cannot say. But from the reading that I have done and my information, I do not know that it is, so to speak, around the corner by quite a ways.

Q Indeed?

A Yes.

Q In spite of the fact that my learned friend pointed out to you what the result of the investigation by the Research Council of this Province was?

A Yes, that is right.

Q In spite of that?

A Yes.

Q You say that those appliances which they used to get those efficiencies are not available on the market?

A I did not say they were not available on the market. I do not think I did.

Q Are they?

A To what extent they are I do not know.

Q What were they?

A I did say I thought, Mr. Steer, that when you came to spend



H. Zinder,  
Cross-Exam. by Mr. Steer.

- 5023 -

money, additional money over and above - - that is making an additional investment in order to get the additional efficiency, that the consumer would take that into consideration in my opinion.

Q What were the appliances that they used to get these efficiencies?

A I do not recall the ones that Mr. Fenerty mentioned offhand.

Q Do you know, do you know what they were?

A I do not recall.

Q I am not asking about what Mr. Fenerty mentioned. I am talking to you about your knowledge. What were those appliances that would give that efficiency for coal?

A Give what efficiency?

Q 89%.

A Well that particular case I would not know. I am assuming that they had Feed water heaters. That they had other appliances for conserving heat and holding down the stack temperature and reducing the waste through the stack.

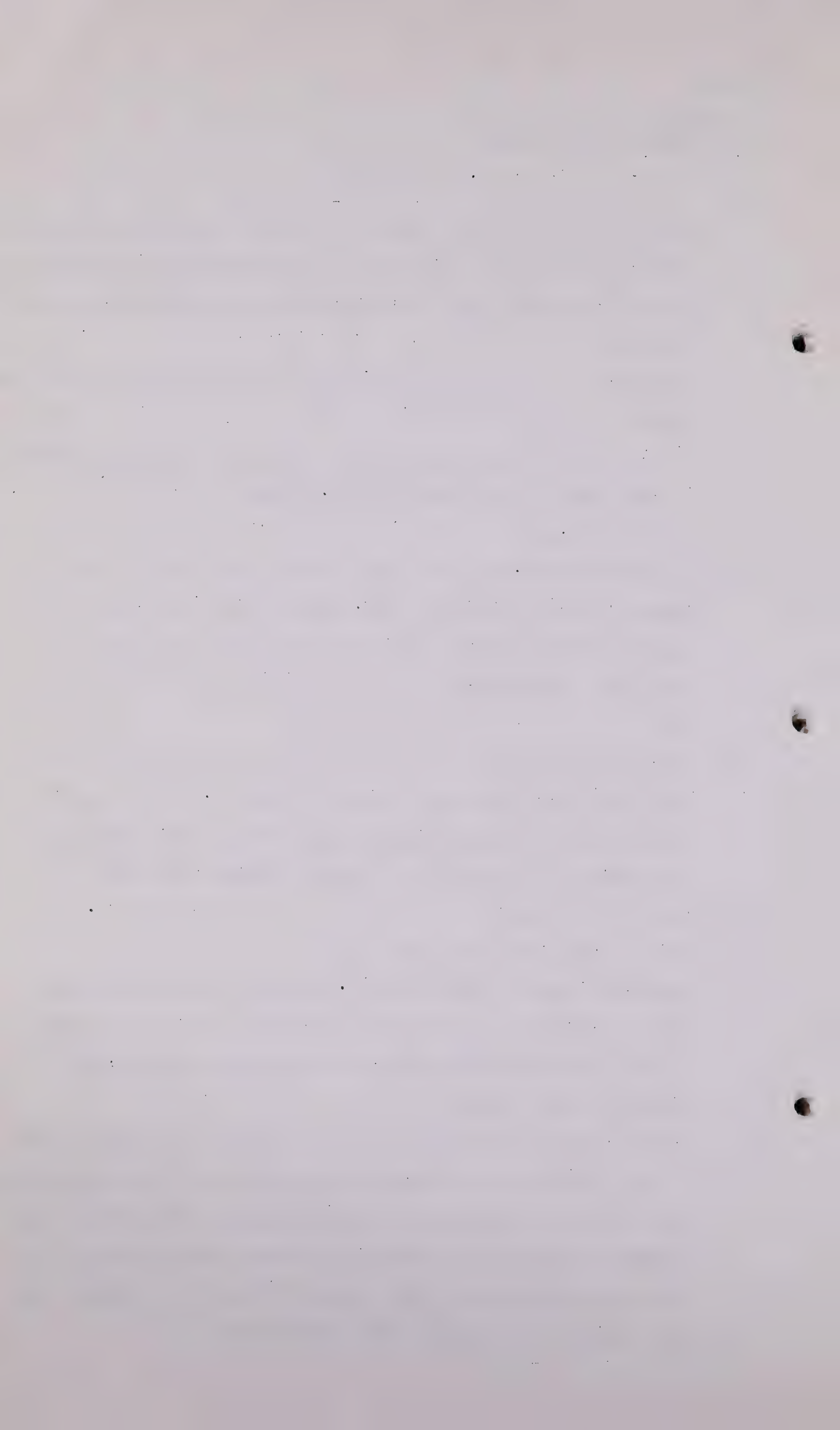
Q What is the cost?

A I do not know what the cost is.

Q Now then, can you imagine any better way for encouraging the use of these appliances, if they are available, than to increase the price of gas for domestic purposes from 25 cents to 33 cents?

A In my opinion, Mr. Steer, such an increase would still have a very small effect on encouraging the use of such appliances.

Q You would say then that you could increase the price of gas in your opinion in Calgary by one-third without encouraging domestic consumers to look around for means of burning coal as a substitute, is that your statement?





H. Zinder,  
Cross-Exam. by Mr. Steer.

- 5024 -

A That is without encouraging them in a large measure, yes.

Q Now on page 1 of this Report of yours you talk about, in about the 6th or 7th line, you talk about the value of natural gas at the burner tip placing an upper limit on the value of natural gas at the well. Now that value - coming down to cases - that value of natural gas at the burner tip for domestic purposes, you in this Report place at 53.6 cents.

A Yes. Based on Drumheller coal.

Q That is what you mean?

A Yes. I would like to perhaps make the qualification I made in the report, Mr. Steer, I said there are other advantages of gas which I have not evaluated.

Q Quite so. But when you talk about, in the 2nd or 3rd line in the third paragraph, "if the value of natural gas for domestic house-heating is taken as an example, this would give a certain value at the well." And again, you take your 53.6 cents and from that you deduct all costs and then you get your well head price.

A You get the ceiling, the ceiling price.

Q Now then, the cost of distribution from the outlet of the scrubbing plant to the burner tip in Calgary appears to be around  $5\frac{3}{4}$  cents.

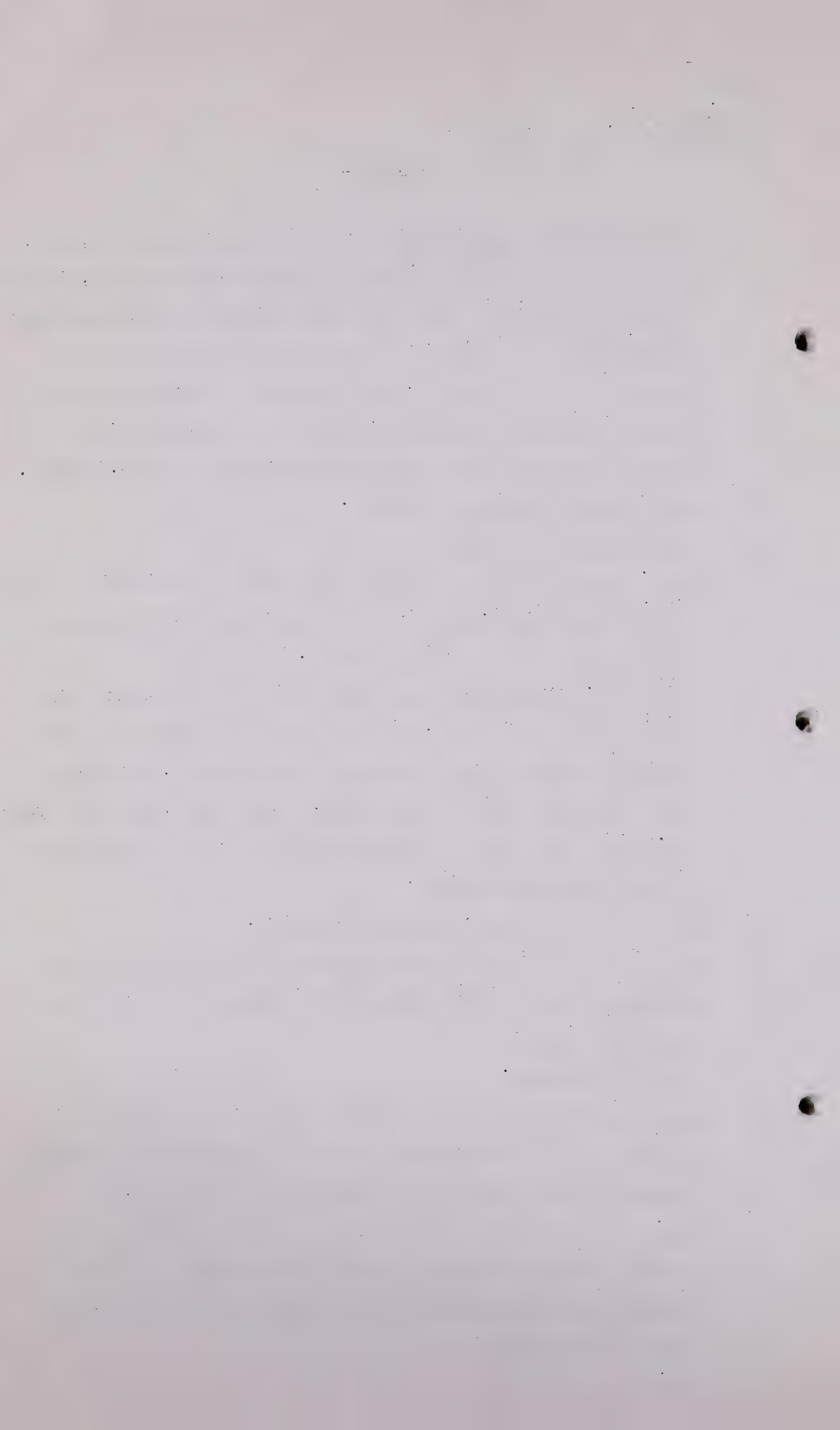
A I do not know it.

Q Well I will tell you the evidence with respect to that is that the price, the wholesale price to the Canadian Western Company at the outlet of the scrubber is  $7\frac{3}{4}$  cents.

A Yes.

Q And the evidence also is that gas, residue gas that is bought from other people by the supplier to Calgary, is paid for at 2 cents.

A Yes.



H. Zinder,  
Cross-Exam. by Mr. Steer.

- 5025 -

Q So that that would appear to put a price of 2 cents a thousand feet on the residue gas as a commodity and  $5\frac{3}{4}$  cents to cover the charges.

A Yes.

Q Is that right?

A Yes.

Q Now if we took those figures, you take your 53.6 cents and you deduct  $5\frac{3}{4}$  cents and you get the upper limit of the well head price, is that it?

A That would be the upper limit, yes.

MR. McDONALD: Oh no.

MR. STEEP: The witness says it is, Mr. McDonald.  
So perhaps you will have to accept it.

A Let me see if I got your question correct.

Q I think you got the question all right.

MR. McDONALD: There must have been some intermediate costs. Do you mean to suggest there are no costs from the Scrubbing Plant to Calgary?

THE CHAIRMAN: You have another  $18\frac{1}{4}$  cents, Mr. Steer.

MR. McDONALD: Certainly. You said  $5\frac{3}{4}$  cents.

MR. STEER: Well let the witness clear it up.

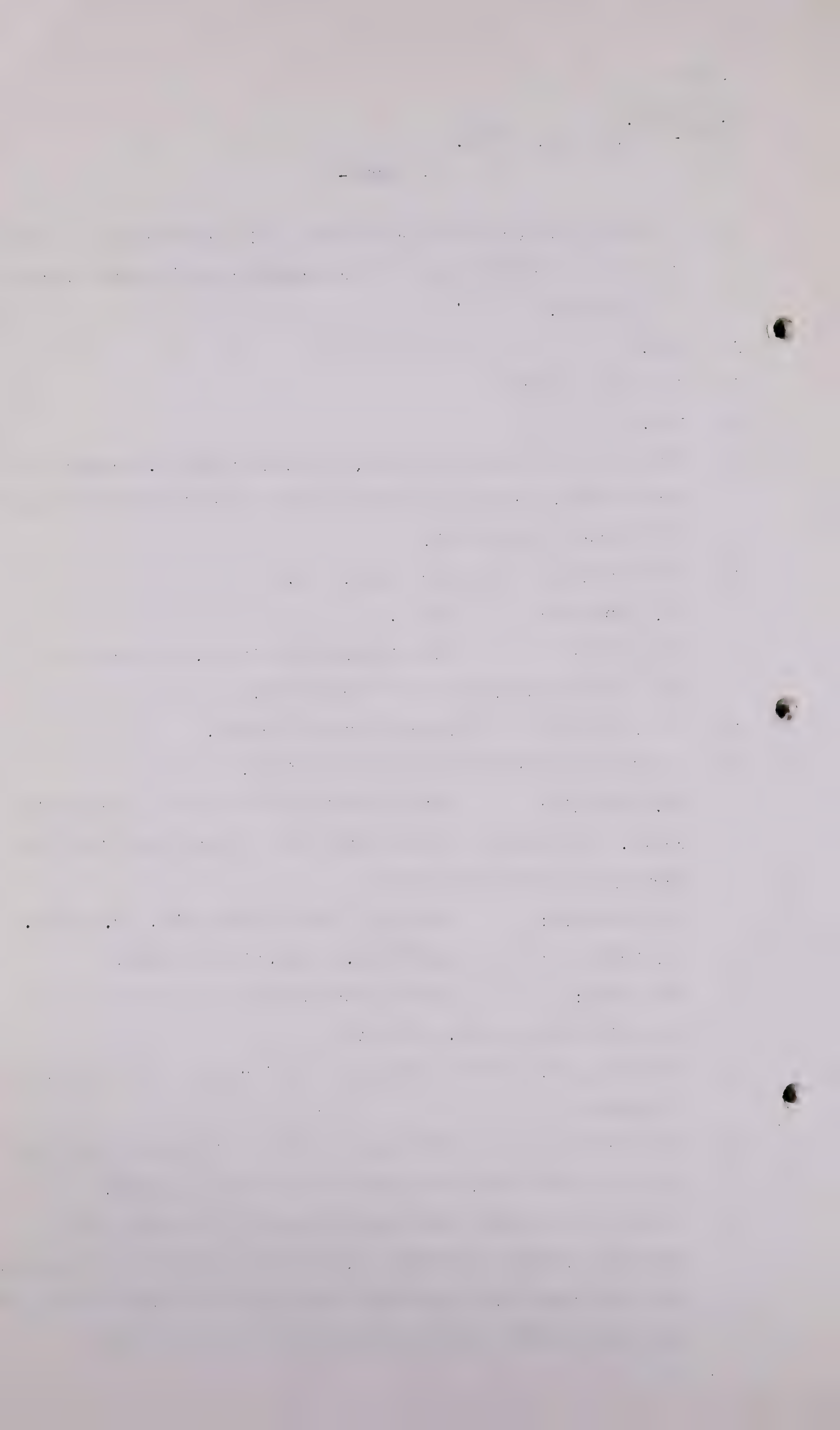
Q What did you say, Mr. Zinder?

A I say no, Mr. Steer, you do have to include other costs, I am sorry.

Q Now you got me into all this trouble. If you had said no in the first place, that would have been all right.

A I may have thought your question meant something else.

(By the Reporter reading): Q. Now if we took these figures, you take your 53.6 cents and you deduct  $5\frac{3}{4}$  cents and you get the upper limit of the well head price, is that it?





H. Zinder,  
Cross-Exam. by Mr. Steer.

- 5026 -

Q MR. STEER: Now what is the answer?

A The answer is as I stated in the submission, Mr. Steer, that I take 53.6 cents and you have got all your intervening costs between the burner tip and the well head and you deduct all those costs.

Q All right. So that if the well head price is properly 2 cents and the domestic rate is 25 cents, you deduct 23 cents.

A If 25 cents represented the value at the burner tip and 23 cents represented the intervening costs, that is what I would do.

Q I was going to ask you the next thing about this word "distribution", that is used down here on the third last line of page 1, and ask you whether by that you meant the Canadian Western Distribution costs?

A I did.

Q All of which is fixed by the public Utilities Board as you know.

A I do not know that the costs are fixed. I assume the rates are fixed but I do not know about the costs being fixed.

MR. HARVIE: We hope they will be.

THE CHAIRMAN: We will take that percentage the way we take yours and then at the end of the year see which is correct.

MR. STEER: Without the same percentage of variation, I hope.

Q Of course the fundamental thing about this whole Report of yours, Mr. Zinder, is the price of coal, is it not?

A I think it is very fundamental.

Q And you know nothing about this Alberta market for coal, do you?

A I have made no investigation of the general market.



H. Zinder,  
Cross-Exam. by Mr. Steer.

- 5027 -

Q Even if you were a competent coal mining engineer, which you are not, is that right?

A That is right.

Q You have not made any investigation?

A I have simply made an investigation with respect to the prices of coal in Calgary.

Q And that you got from certain informants who are not necessarily connected with the coal business at all?

A Well I would say it was with regard . . . . . From coal dealers and the Wartime Prices Board and others.

Q Did you go and see them?

A I did not, personally, no.

Q No, that is what I thought. Would it surprise you to know that when natural gas was introduced into Edmonton, the price of coal was gradually lowered from year to year?

A Yes.

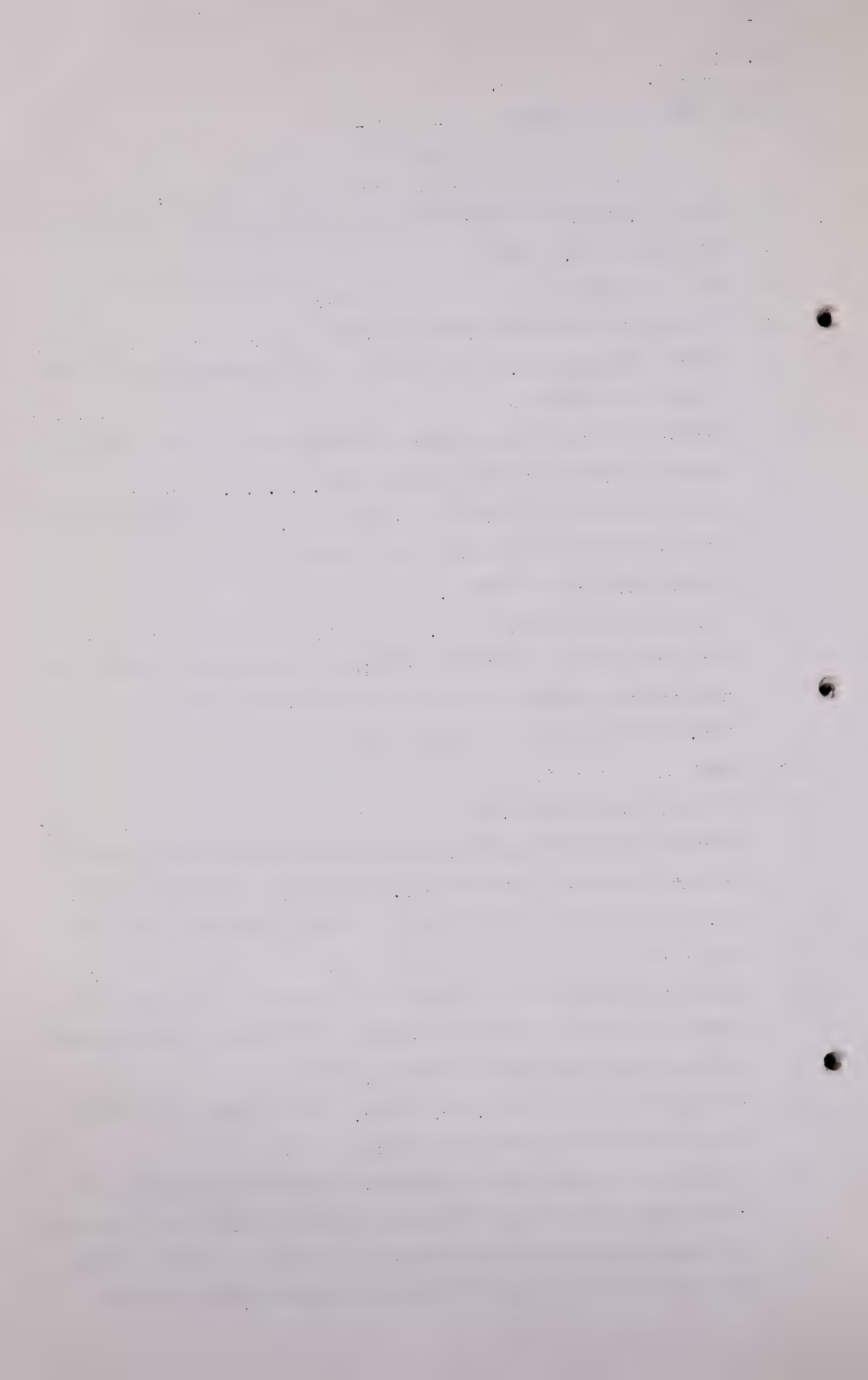
Q That would surprise you?

A It would surprise me, that is that it was lowered and secondly that gas had that particular influence on it or that was the result of gas being introduced. I do not know that that was so.

Q Would it surprise you to know that it kept on going down for some time until it looked as though it could no longer compete with gas and that then it began to go up.

A It would be very interesting, yes. I do not know the facts with regard to Edmonton, Mr. Steer.

Q Suppose that there was an extensive advertising campaign for these new facilities for burning coal and suppose coal operators in this Province who were crying for markets - I will ask you to assume that they are - wanted to take advantage of that





H. Zinder,  
Cross-Exam. by Mr. Steer.

- 5028 -

campaign and persuade people to introduce coal burning appliances, what effect do you think that would have on the price of coal?

A I do not know that it would have . . . . In my opinion I do not know what the effect might be. There are so many factors that are involved. It depends on the price of coal that would be called upon. It depends on the mines in the area and things and factors of that kind. It might actually cause an increase in price.

THE CHAIRMAN: It might mean that other places would be subsidizing the price of coal in Calgary?

A I did not get the first part of your question.

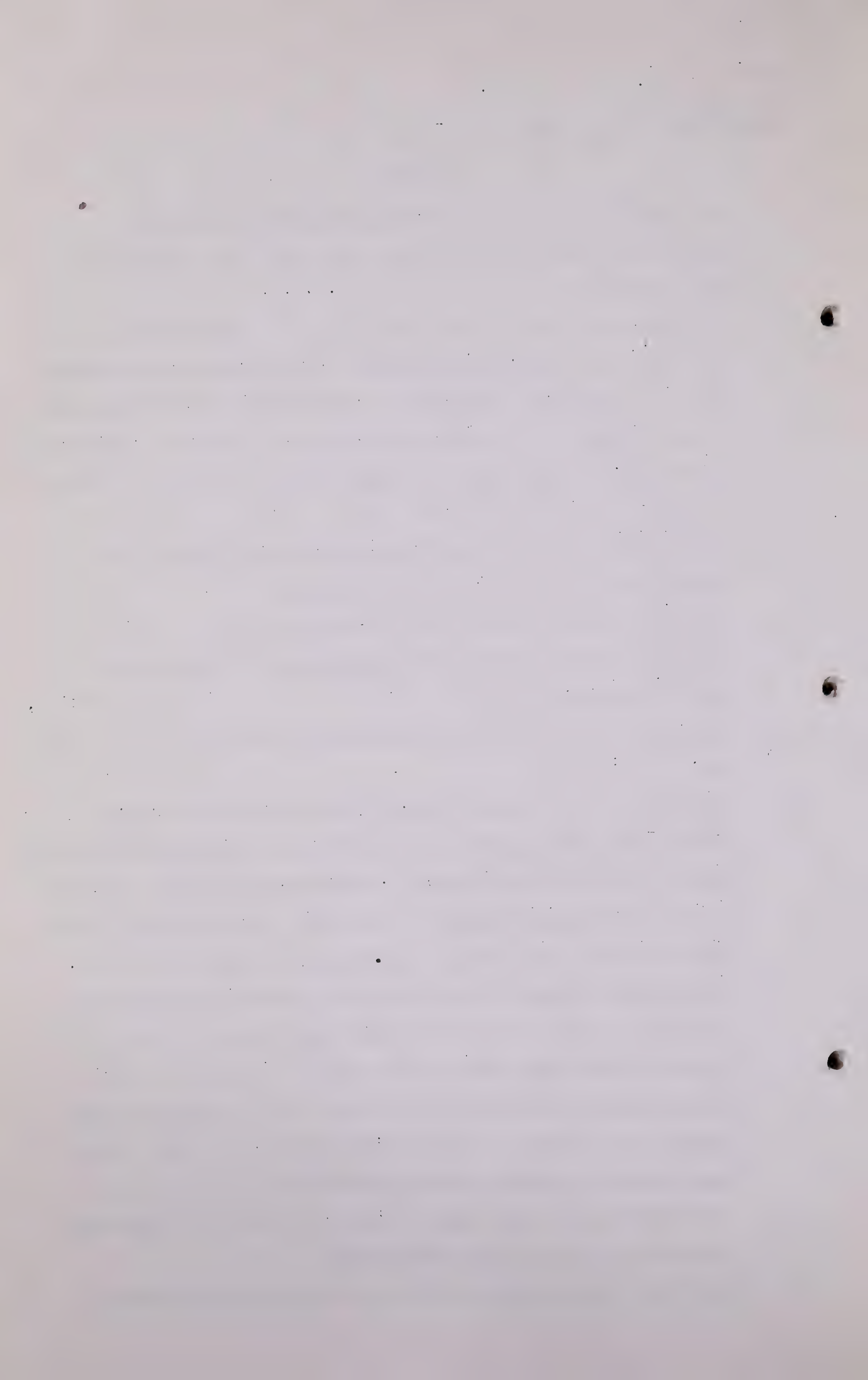
Q It might also mean that other places would be subsidizing coal in Calgary?

A That is right, if it were cut-throat competition of that kind, yes.

Q MR. STEER: Now I would like to talk to you for a moment about this block rate. If I understand your proposition right - you made two or three quite interesting ones - I think you told my learned friend, Mr. Fenerty, that you would study the industrial rate and you would decide whether or not it could stand lifting. We will say you decided against that. And then you would study the second rate, which is the commercial and light industrial rate and you would decide whether that could stand lifting and we will say you decided against that, because even on your submission in some cases these rates are pretty closely competitive.

A I think I did say, Mr. Steer, that with regard to commercial you could go up to at least 33 cents.

Q Yes, what you are going to do is to say to the consumer in



T-3-10

H. Zinder,  
Cross-Exam. by Mr. Steer.

- 5029 -

Calgary, the domestic consumer in Calgary and the second class too, if you like, you are going to say "You people should pay more for your gas and the industrial consumer cannot pay any more for his gas. If you make him pay any more he is going to use coal and you two people have got to pay more because he cannot." That is your proposition, is it not?

(Go to page 5030)





C-4-1 3.20 p.m.

H. Zinder,  
Cross-Exam. by Mr. Steer.

- 5030 -

A I am not recommending great increases, Mr. Steer. I have only I feel I have addressed myself to the problem of trying to determine what is the upper limit of value for natural gas at the well.

Q Yes, and that is all you are here today for?

A That is what I am trying to do.

Q To fix the upper limit of value for natural gas at the well head?

A That is right. Now.....

Q Now you do not say that that actual gas at the well head has a greater value, depending upon whether it is used in industry or in domestic furnaces, do you, or do you?

A Yes.

Q You do?

A Yes.

Q I suggest in both industrial and in domestic use, its value depends upon its B.T.U. content, I am talking now about its inherent usefulness?

A Yes.

Q And I suggest to you that that usefulness depends upon its B.T.U., what do you say about that?

A I would say in the terms, - its value depends on its extra B.T.U., as competition for alternative fuels. Now the B.T.U., a cubic foot of gas has a thousand B.T.U., and a pound of coal being 12,000 or 9,000.....

Q I am talking about a thousand feet of gas?

A Perhaps I misunderstood you.

Q And I am talking about the inherent usefulness of a thousand cubic feet of gas and I say to you that its inherent usefulness depends entirely upon its B.T.U. content. You can qualify that if you like to the extent of the percentage of B.T.U.



H.Zinder,  
Cross-Exam.by Mr. Steer.

- 5031 -

content which can be usefully employed in the appliance?

A With that qualification, I would say "Yes".

Q Yes?

A Yes.

Q Now is there any reason why the domestic consumer should be charged more per B.T.U. than is charged to the industrial consumer per B.T.U., what reason is there behind that?

A Well, take the Gas Company's own rate. The Gas Company's rates for its domestic use are higher than its rates for industrial users.

Q And what reason would you assign for that?

A I would say that the cost is one factor and also I would think the value of the service that it means to the consumer would have an effect on it.

Q So we will have to come to the Utilities Board and find out whether they consider the cost of this distribution is a controlling factor or whether they also consider the question as to whether the domestic consumer will pay more, rather than go to the trouble of converting to some other type of heat?

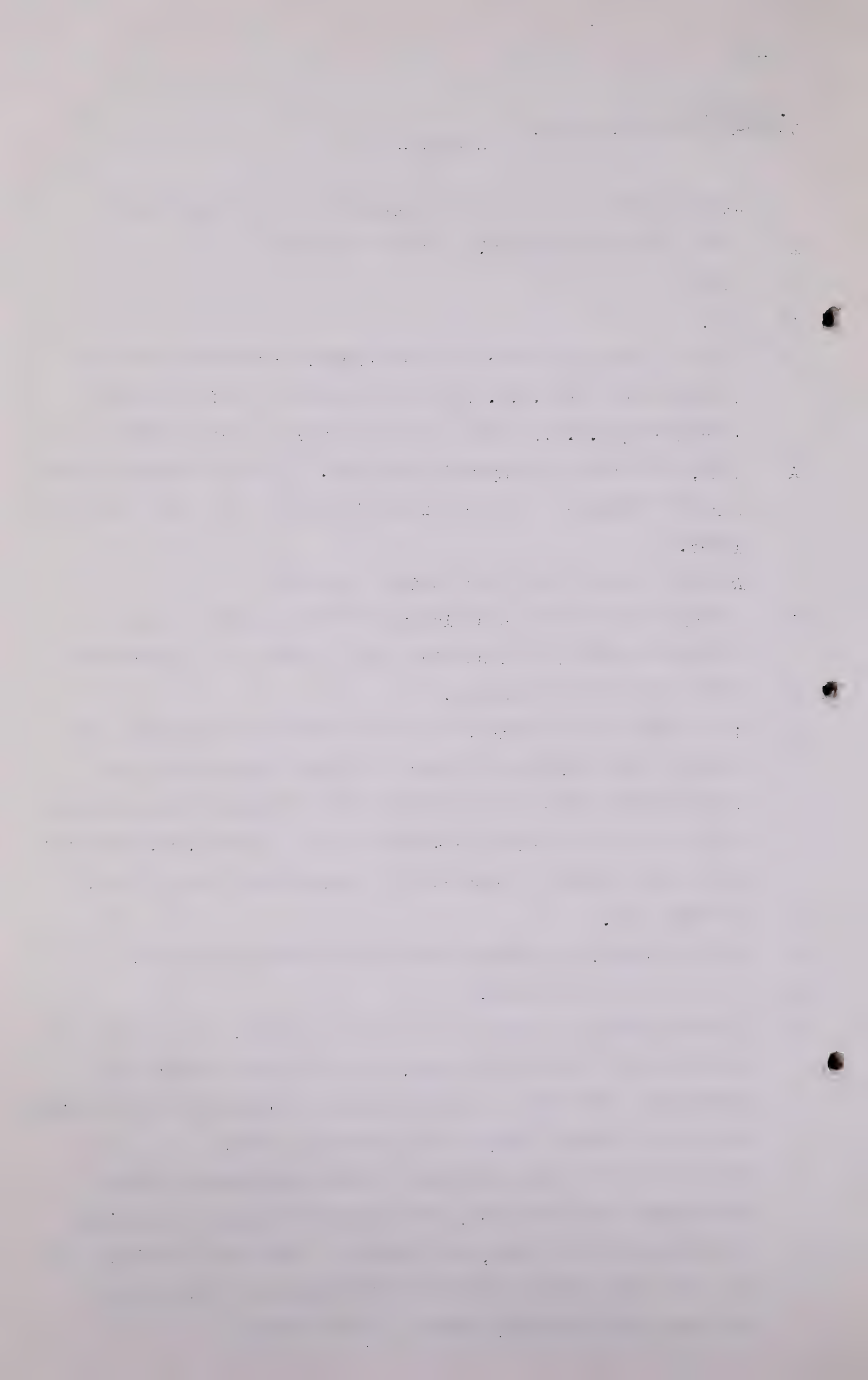
A I suppose so.

Q That is right. We cannot settle that question, can we?

A I do not see how we can.

Q I am suggesting to you as a scientific matter, that if you are going to get a scientific rate, the difference between the industrial user and the domestic user is the cost of delivering, one to the other; now what do you say to that?

A I would say that the cost might be the predominant factor, explaining the difference, but it might or might not explain it 100% in any one case, and whether costs would explain it or cost alone would justify the difference, in the Calgary domestic and industrial rates, I do not know.





H. Zinder,  
Cross-Exam.by Mr. Steer,

- 5032 -

Q Now, Mr.Zinder, you put in revised pages 11 and 12 here,  
and I want to ask you the question, when you made these two  
figures up did you consider differences in temperature from  
year to year?

A I did not.

Q To make these figures accurate, should they not be corrected  
for temperature, average temperatures throughout the year?

A To refine them you would,yes.

Q To refine them?

A Yes.

Q I see, to make them anywhere approaching the truth, they would  
have to be corrected to temperature, what do you say to that?

A I do not know that.

Q Would you prefer not to answer that?

A Would I what?

Q Would you prefer not to answer it because I will not press  
you if you do not want to answer it?

A I would.....

Q I suggest to you, to make that statement anywhere nearly  
scientific, it has got to be corrected for temperatures; you  
will not agree with me?

A No.

Q And you are, - oh well, of course you are not a combustion  
engineer, are you?

A What is that?

Q You are not a combustion engineer?

A No.

Q Perhaps that is the reason you will not agree with me?

A No, I will say that my reason is this, Mr. Steer, - all I am  
trying to do is, I think, or illustrate, is that there are  
other factors than price which influence other users, which



H. Zinder,  
Cross-Exam. by Mr. Steer.

- 5033 -

influence use.

Q Is it not true that you prepared these two pages of that submission for the purpose of showing that decreased rates do not lead to increased consumption, did you or did you not?

A No, I would not say I had that purpose in mind.

Q I see?

A I was.....

Q Now then, if those statements are to be taken as indicating that decreased rates do not lead to increased consumption, do you follow me?

A I am trying.

Q Then I say to you, as a scientific man, that they are misleading and must be corrected to temperature?

A No, I disagree with you for the reason that I stated, I am simply trying to say or illustrate.....

Q I know that.

MR. McDONALD: Just a moment, twice the witness has attempted to answer Mr. Steer and twice he has been interrupted.

MR. STEER: Yes, but I thought it would save a lot of time if I put my question.

(Go to page 5034).





H. Zinder,  
Cross-Exam. by Mr. Steer.

- 5034 -

Q MR. STEER: However go ahead.

A I have used these figures to illustrate what I have set and believed to be a principle, that there are other factors, other than the rate itself, the price paid, which influence the use of gas by the consumer.

Now temperature might be one.

Whether it is a depression or a boom year would be another.

All sorts of factors.

Now you might correct the figures for temperature but can I correct them, - you might say "Let us correct the figures for the business cycle". You might correct it for the business cycle and then let us say, correct it for the standard, the value of the dollar between the two periods.

I might go on and on. I think it is only illustrative in my opinion of the fact that there are other factors other than price which influence consumption.

Q Mr. Zinder, your answer is not an answer at all to what I have asked. I asked you whether those two sheets, with the new figures on them, were prepared for the purpose of showing that decreases in price do not increase, or lead to an increase in demand, and you say they were not.

A That is right.

Q You say that is right ?

A That is right.

Q Now I say to you, assuming that those sheets were read as an attempt to prove that decreases in price do not lead to an increase in demand, do you, as a scientific man, say that the figures ought to be corrected for temperature ?



H. Zinder,  
Cross-Exam. by Mr. Steer.  
Cross-Exam. by Mr. Chambers.

- 5035 -

THE CHAIRMAN: Well I think, Mr. Steer, inferentially from his last answer, it is "yes". He said "you must correct them for other factors as well."

WITNESS: Well I think - -

Q THE CHAIRMAN: Is that not right ?

A That is right in my opinion.

MR. STEER: That is all, thank you.

THE CHAIRMAN: Mr. Chambers ?

CROSS-EXAMINED BY MR. CHAMBERS:

Q MR. CHAMBERS: Mr. Zinder, I am going to show you Exhibit 134, which is the rate schedule history of the Canadian Western Natural Gas, Light, Heat & Power Company Limited in Calgary from 1913 down to the present, and I would ask you to look at the period from October 8th, 1928 to December 11th, 1939 ?

A Yes.

Q Now would you just examine the Exhibit carefully and see whether your understanding of it is the same as mine, that there was just the one rate in force at that time ?

A That is correct.

Q And will you just, for the purposes of the record, so that we will have it for the basis of our discussion, which I am going to have with you, tell us what those rates were.

A For the period October 8th, 1928 to December 11th, 1939, the Canadian Western Company had a domestic, commercial and industrial rate as follows: the first 150 MCF 33 cents net.

I will read the net figures if that is agreeable ?

Q Yes.





H. Zinder,  
Cross-Exam. by Mr. Chambers.

- 5036 -

A The next 150 MCF thirty cents; the next 500 MCF twenty-five cents; the next 1000 MCF twenty cents; the next 3000 MCF seventeen cents; over 5000 MCF fifteen cents. Minimum charge one dollar. No grouping of accounts.

Q Now you are familiar with rate schedules, would you take it from that that there was only the one rate in Calgary at that time applicable to all customers, irrespective of whether they were domestic, commercial or industrial ?

A With one possible exception, Mr. Chambers. I do not know whether special contracts in the case of especially large customers was permissible under the rates other than this one or not at the time but I am assuming that these applied to practically all customers.

Q Assuming that is the whole story ?

A Yes.

Q Would that be your interpretation of that rate ?

A That is right.

Q Now I view a copy of Appendix 4, the one which was filed since noon, of Exhibit 135 ?

A Yes.

Q And as I understand it, these rates which you have read from Exhibit 134 were the same for each of the years 1934 to 1939, which are shown on your Appendix 4, is that right ?

A That is right.

Q And while your appendix 4 of Exhibit 135 classes such as domestic, commercial and industrial, the same rate applies to all of them ?

A That is right.

Q According to Exhibit 135 ?

A That is correct.

Q Would you turn to Exhibit 2, or Appendix 2 of Exhibit 135 ?

A Yes.

1. The first part of the paper is devoted to a general discussion of the problem.

2. In the second part, we shall consider the case of a single particle.

3. The third part is devoted to the case of a system of particles.

4. In the fourth part, we shall consider the case of a continuous medium.

5. The fifth part is devoted to the case of a system of continuous media.

6. In the sixth part, we shall consider the case of a system of particles and continuous media.

7. The seventh part is devoted to the case of a system of particles and continuous media.

8. In the eighth part, we shall consider the case of a system of particles and continuous media.

9. The ninth part is devoted to the case of a system of particles and continuous media.

10. In the tenth part, we shall consider the case of a system of particles and continuous media.

11. The eleventh part is devoted to the case of a system of particles and continuous media.

12. In the twelfth part, we shall consider the case of a system of particles and continuous media.

13. The thirteenth part is devoted to the case of a system of particles and continuous media.

14. In the fourteenth part, we shall consider the case of a system of particles and continuous media.

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16. The fifteenth part is devoted to the case of a system of particles and continuous media.

17. In the sixteenth part, we shall consider the case of a system of particles and continuous media.

18. The seventeenth part is devoted to the case of a system of particles and continuous media.

19. In the eighteenth part, we shall consider the case of a system of particles and continuous media.

20. The nineteenth part is devoted to the case of a system of particles and continuous media.

21. In the twentieth part, we shall consider the case of a system of particles and continuous media.

22. The twenty-first part is devoted to the case of a system of particles and continuous media.

23. In the twenty-second part, we shall consider the case of a system of particles and continuous media.

24. The twenty-third part is devoted to the case of a system of particles and continuous media.

25. In the twenty-fourth part, we shall consider the case of a system of particles and continuous media.

26. The twenty-fifth part is devoted to the case of a system of particles and continuous media.

27. In the twenty-sixth part, we shall consider the case of a system of particles and continuous media.

28. The twenty-seventh part is devoted to the case of a system of particles and continuous media.

H. Zinder,  
Cross-Exam. by Mr. Chambers.

- 5037 -

Q As I understand it those figures were obtained from the Gas Company ?

A That is correct.

Q And likewise the rates that you have just read to us from Exhibit 134, were in effect throughout all of those years 1929 to 1939 inclusive shown on Appendix 2, is that right ?

A That is right.

Q Am I right in this Mr. Zinder, in order to get the entire sales of the Gas Company for those years 1929 to 1939 as shown on Appendix, if I take the average number of customers and multiply it by the average consumption would that give me the total sales ?

A I think it would. I do not know exactly how the averages in each case were derived. It might not give it to you exactly but pretty close.

Q Approximately ?

A Yes.

Q And the same would apply I take it to Appendix 4 of Exhibit 135 for the years 1934 to 1939, would it not ?

A Yes.

Q Am I right in this interpretation of these two Appendices 2 and 4 that the load of the Gas Company increased progressively during those years. In the one case from 1929 to 1939 and the other 1934 to 1939. Would you just glance over it ?

A I think that is right. Let me see. 1929 - 1939. They seem to be pretty close together. The total consumption based upon Appendix 2, they are pretty close together for those two years.

Q I wonder if you would give some thought to that question over night because I might want to pursue it further with you

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H. Zinder,  
Cross-Exam. by Mr. Chambers.

- 5038 -

tomorrow ?

A All right.

Q But in any case as I understand it those two Appendices 2 and 4 indicate that large quantities of gas were sold by the Canadian Western to its customers, domestic, commercial and industrial at the rates shown in Exhibit 134 which you have read to us ?

A That is right. I might state if I can at this point Mr. Chambers, my slide rule calculation indicates an increased total consumption based on these figures for 1939 as compared with 1929.

Q I am going to ask you to assume that there was a depression here in the early thirties as well as other places, and, I am going to ask you to assume that coal prices laid down in Calgary during the period 1929 to 1939 inclusive were less than they are now. Those two assumptions -

A I see.

Q Assuming those assumptions are true, what would you, as a man who has given study to rates and had to do with these things, indicate would happen if instead of the rates now in force in Calgary as shown on Exhibit 134, were changed back to those that were in effect in October 1928 to December 11th, 1929 ?

A Well the only information I have to go on is the detailed information I show with Schedule No. 1 and that starts with 1937. You ask me to assume that the price of coal is less in those earlier years than today, and then ask me further to assume that the Company would go back to these rates.

Q 1939.

A The percentage heating saturation was high at that time. It was around 87 or better than 87%.



H. Zinder,  
Cross-Exam. by Mr. Chambers.

- 5039 -

Q Well that is the point Mr. Zinder and I want to get your views of this thing. As a layman this thought occurs to me and I want you to give me your reaction. Then in the period from 1929 to 1939 large amounts of gas were sold to consumers by the Gas Company as shown by those Appendices 2 and 4 at rates considerably higher than they are now ?

A Yes.

Q And if that were so at a time when coal was cheaper than it is now it strikes me as a layman that if you went back to those prices you would still sell gas to those people in comparable quantities. Give me your reaction.

A My conclusion is certainly that Mr. Chambers. I stated in my submission that I thought the prices in Calgary could go up to at least 33 cents which was the top price at that time without materially affecting consumption.

Q Now I think in Schedule 1 to your Exhibit 135 you give us - is that the percentage heating saturation ?

A That is correct.

Q First, for domestic and then for commercial ?

A Yes.

Q And as I understand it during this period which we have been talking about when these rates were constant that under those rates in 1937 the Gas Company had obtained 87.6% of all the domestic heating market ?

A That is right.

Q And in 1938 had 86.5% of the domestic heating market ?

A Yes.

Q And in 1939 - 86.7%, and in 1940 - 87.5% ?

A Yes.

Q And in 1941 - 88.2%. I am going beyond the dates.

*(continued)*

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H. Zinder,  
Cross-Exam. by Mr. Chambers.

- 5040 -

A I might make one statement. That percentage is percentage of customers, of total customers, domestic customers of the Gas Company and I assume that the Gas Company had substantially all the domestic consumers of gas. That is all on its gas distribution system, so I consider that a representative saturation percentage. That is for the community.

Q In your experience would you regard that as a pretty high percentage of saturation ?

A Yes.

Q I notice also on Page 6 of your Exhibit 135, the second paragraph you say:

"It may be considered that this is borne out by the fact that as early as 1937 when the price of natural gas in Calgary for domestic house heating was essentially 33 cents per MCF approximately 87% of the Company's domestic consumers used natural gas for heating".

A Yes.

Q Now I am going to refer you to, and by the way in 1941 that was 88.2% ?

A Yes.

Q Now I am going to refer you to the statement of Mr. Brownie who gave evidence on behalf of the Gas Company in Volume 17, at Page 1337. He says,-

"A careful study was then made as to what the market might be in 1948. In other words, care was directed towards the estimate for the year 1948 on the assumption that other years could be fitted to it. In the year 1939 total gas produced and purchased exceeded gas produced and purchased in the year 1929 by less than 1%. Since variations in annual mean temperature gives a

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H. Zinder,  
Cross-Exam. by Mr. Chambers.

- 5041 -

variation in annual gas demand, it is important in making comparisons to correct for this factor. If both years are corrected to the same temperature conditions, the 1939 figure was some 4% higher than the 1929 figure, or an increase of less than 4/10ths of 1% per annum. In spite of this small increase the number of customers increased by 5000 during that same period, 1929 to 1939, from 19,000 to 24,000."

A Yes,

Q And I think you have told me during that period, according to Exhibit 134 the rates were the same ?

A Yes.

Q Then he goes on:

"The total gas produced and purchased corrected to normal temperatures was about 6 million 5 hundred thousand MCF in 1939. If the same trend were followed as from 1929 to 1939, the 1948 figure would be around 6 million 7 hundred thousand MCF or about 3-1/3% higher to 1939. Without the occurrence of the war, this would not have seemed unreasonable, since the Company enjoyed a relatively high degree of market saturation. According to the 1941 Dominion census, 92% of all the homes in the City of Calgary were gas heated."

Now you would regard it as I understand that 92% is a very high degree of saturation ?

A Could not go much higher. It is very high Mr. Chambers.

( Go to Page 5042 )

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H-4-1 3.50 p.m.

H. Zindor,  
Cross-Exam. by Mr. Chambers.

- 5042 -

Q Now then, I would like to discuss with you for a moment this percentage business, and the relative efficiencies of coal and the gas. As I understand it, you prepared or had prepared Exhibit 135, after you had had an opportunity of reading and seeing the submission or the brief prepared by the Gas Company dated August 1945, is that right?

A That is right.

Q And I think in your answer to Mr. Fenerty this morning you stated that aside from any particular study or information that you had with regard to the Calgary situation, that the 55% efficiency for coal as compared with the 70% efficiency for gas for domestic purposes struck you as more or less in line with your general information in other cases?

A That is right.

Q Now, you have got a copy of the Gas Company's submission?

A I have.

Q Will you turn to page 6? Would I be right in assuming that one of the reasons that you used the 55% and 70% with respect to domestic coal and gas on page 5 of Exhibit 135, was due to the information that appeared on page 6 of this submission that was prepared by the Gas Company?

A I would say that was one of the reasons, yes.

Q And I would ask you also to turn your attention to page 7 of that same submission, and to appendix 4 of that same submission?

A Yes.

Q Did you have that information in front of you or did you consider it at all when you were preparing your Exhibit 135?

A Yes, I had it. I had it, yes.

Q I would like to discuss with you for a moment this business of block rates that you mention on page 9 of Exhibit 135. I am going to suggest this proposition to you for your consideration,



H. Zinder,  
Cross-Exam. by Mr. Chambers.

- 5043 -

that findings of competitive prices and conditions, and efficiency as between coal and gas in the domestic, the commercial and the industrial consumers' market in Calgary, an absolute amount can be made of what the maximum rights are in those classifications?

A Yes.

Q The Gas Company has information as to what it has sold in the past over a period of years, therefore, we could make a fairly accurate estimate as to the probable amount that you are going to sell for domestic purposes, and the probable amount you are going to sell for commercial purposes, and the probable amount you are going to sell for industrial for a year or two years. And in that way you could forecast the gross revenue of the Gas Company, and you can also estimate their total expenses including capital charges?

A Yes.

Q And likewise the same with the expenditure of the Madison Company, and the others that perform a service between the consumer and the producer?

A Yes.

Q And that when you deduct all those charges what is left would constitute the aggregate well head value of all the gas?

A Yes.

Q You follow me?

A You are taking or deducting all distribution and intervening costs between the well head and the burning of the gas.

Q Yes?

A Yes.

Q That could conceivably be done?

A Yes.

Q Now I am putting it to you that while it might be necessary for





H. Zinder,  
Cross-Exam. by Mr. Chambers. - 5044 -

the reasons that you have discussed here today, to have different prices as between the different kind of consumer that you still have a uniform price at the well head by merely dividing the aggregate value of the gas at the field, computed in the manner we have discussed?

A Yes.

Q By the number of MCFs?

A Yes, that is right.

Q In other words, I am suggesting to you, Mr. Zinder, that the principle of what you had in mind when you talked about block rates, could be worked out without having a different per MCF rate at the well head? What do you say as to that?

A Two things, Mr. Chambers. One is, I am not recommending that the value so determined of gas at the well be established. I am saying it is the maximum value we are trying to find, where the ceiling is, therefore, I would not go through that process unless it has been determined that the maximum value shall be the price at the well.

Q No, but what I meant.....

A Now.....

Q Pardon me?

A But assuming, even assuming that that would give you the price that the Board would be satisfied represents a reasonable price, or value of gas at the well, that the producer should have, I still would think, I might be prejudiced, I still think that the block rate may be preferable if it can be made to work, for this reason, that that requires calculation every year, and if you establish a block rate you make the calculation once. Now, it may sit more or less for a period of years. That is what is done in rate making all the time.

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H. Zindor,  
Cross-Exam. by Mr. Chambers.

- 5045 -

Finally, if you find that it is out of line, or gets to be substantially so after a period of time, well you adjust it, but those are the relative advantages and disadvantages of those two approaches, as I see it, Mr. Chambers. I am speaking now without further consideration. My opinion would be that I would still lean towards the block rate.

Q I know, but in order to work this block rate out, wouldn't you also have to, in order to be anywhere nearly accurate, wouldn't you have to check it each year with the proportion of the Company's gas sales to the domestic, commercial and industrial?

A Would I have to make an adjustment every year?

Q Yes?

A I would say no. If you are going to make an adjustment every year then I would certainly think that your suggestion then is preferable. I might add, Mr. Chambers, with regard to that thought and recommendation or suggestion, it has a number of advantages in my mind, unless you are going to make a careful study at the conclusion of every year. For example, if the rate is set at a particular point now, it is geared in turn in some measure to the load that is now on the system, and the character of that load. And let us assume you have two very large industrial customers, as you do in this case, that use a very substantial part of the total amount of gas. If those customers are dropped by the Gas Company, or lost, that is the 2 cent gas, in terms of cost the output of the field would be smaller, the unit costs are higher. The same thing is true of the Gas Company's rates, they are adjusted for value. What they lose in revenue from their market as their load drops, is first, the lower priced gas, and the average unit cost of the remaining customers goes up.

Q Well, Mr. Zindor, you are more or less familiar with the Natural

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H.Zinder,  
Cross-Exam. by Mr. Chambers.

- 5046 -

Gas Utilities Act?

A Yes.

Q And you know that under that Act that all producers of the gas are treated alike, so far as the market is concerned?

A Yes.

Q Now, the thought that occurs to me is this, and I am asking your reaction to it, that even if you take your block rate?

A Yes.

Q That the total amount realized computed on that block rate ends up with an aggregate amount of money, does it not?

A That is right.

Q And you could still, so far as the actual payment or division of the money to the producer is concerned, divide that amount by the number of MCF and have an average rate?

A Yes, that is right, for payment to the individual producers.

Q That is the point I am trying to get clear, because I think there is some misunderstanding about what you are recommending?

A Yes.

Q With regard to page 9 of Exhibit 135?

A I do think, Mr. Chambers, it would have to be done that way, yes.

Q And that what you are talking about on pages 8 and 9 does not necessarily mean that the producer of gas is going to get paid for one MCF at a certain price, and then another MCF at another price?

A No, not carried back right to the individual well.

Q Now there was some discussion with you by my learned friend, Mr. Fenerty, and I think also by my friend, Mr. Steer, as to the efficiency or the improvement in efficiency of appliances with respect to the use of coal. I suggest to you that there have been improvements effected in appliances for the use of gas,



H.Zinder,  
Cross-Exam.by Mr. Chambers,

-5047 -

natural gas?

A I think there have, yes.

Q And I suggest that the improvements may be effected in the appliances for the use of gas at comparatively cheap cost, and what I have in mind is, and I am asking you your reaction, that so far as the householder is concerned, that he could make a great improvement by the type of burner that he uses, is that right?

A That is right.

Q Have you any information as to whether there have been improvements in the type of burner for the householder's burner?

A Nothing specific at the moment. It is my understanding, based upon my reading, that there have been improvements made.

Q And there have been improvements in the type of furnaces themselves, am I right in that?

A Yes.

THE CHAIRMAN: What about conversion, Mr.Chambers?

MR. CHAMBERS: Conversion?

THE CHAIRMAN: What about conversion from one type of furnace to the other? Which is cheaper, converting from gas to coal or from coal to gas? I think I know, but judicially I do not know.

Q MR. CHAMBERS: Yes, I would like your views on that in response to the suggestion of the Chairman, Mr.Zinder?

A Well, you cannot convert a furnace which has been designed to burn gas, that is, a gas furnace to coal. You can convert a coal furnace which has been designed for coal to gas. Now, to convert back again from gas to coal, the amount of investment might vary. Might be nominal if the grates have been saved and

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H.Zinder,  
Cross-Exam. by Mr. Chambers.

- 5048 -

things of that kind. Does that answer your question, Mr. Chairman?

THE CHAIRMAN: Yes.

Q MR. CHAMBERS: I think you said something to my friend, Mr. Fenerty, this morning about the relative prices of coal, speaking generally, in the United States and Canada. Did I understand you correctly that taking it by and large, the average price of coal in the States is less than in this country?

A I would not want to make that statement, Mr. Chambers. It varies. If you are right in the heart of the Appalachian district, where the coal is mined, in Pennsylvania and West Virginia, you get one price for coal. For example, if you are in the State of Texas, there is no question of coal competition. Coal does not come down there. You go to California, and you also do not get it. It varies very widely. It varies over wide limits in the States.

Q As I understand it, the Appalachian area you have mentioned is a coal area?

A Yes, that is right.

Q And we in this country regard Pennsylvania as a coal state?

A Pennsylvania is also a coal area.

Q Is Pennsylvania a part of the Appalachian area?

A Yes.

Q And large quantities of coal are produced in Pennsylvania?

A Yes, that is right.

Q Have you any idea, can you give us any quotations on what price coal is there for domestic and industrial purposes?

A I am sorry, I could not do that.

Q Could you check it up?

A I could make a check.

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H.Zinder,  
Cross-Exam. by Mr. Chambers.

- 5049 -

Q Could you check it while you are up here?

A Yes. I could give you the price of coal in Pittsburgh.

MR. STEER: I do not think it should be introduced here in this way, in the light of your objection this morning, Mr. Chambers.

MR. CHAMBERS: He is here to submit to cross-examination for the accuracy of what he says and what he knows about it.

MR. STEER: He is not here to give that evidence, except over my objections.

MR. CHAMBERS: Well I am going to ask him questions tomorrow about it, if he has the information.

(Go to page 5050 ).





T-4-1 4.10 P.M.

H. Zinder,  
Cross-Exam. by Mr. Chambers.

- 5050 -

Q Are you familiar with the book known as the A.G.A. Rate Service, American Gas Association?

A Yes, sir.

Q Have you had occasion to use it?

A I use it quite a bit.

Q And did you use it when you were with the Federal Power Commission?

A Yes, sir.

Q What I am suggesting to you, Mr. Zinder, is this, that coal in Pittsburgh is in competition - to what extent I am not asking you to say - with gas rates that are considerably higher than here.

A That is right.

Q I am going to refer you to page - I am talking about Pittsburgh.

A yes, sir.

Q To pages 353 and following of the A. G. A. Rate Service. Would you take your time and look through that?

A Yes.

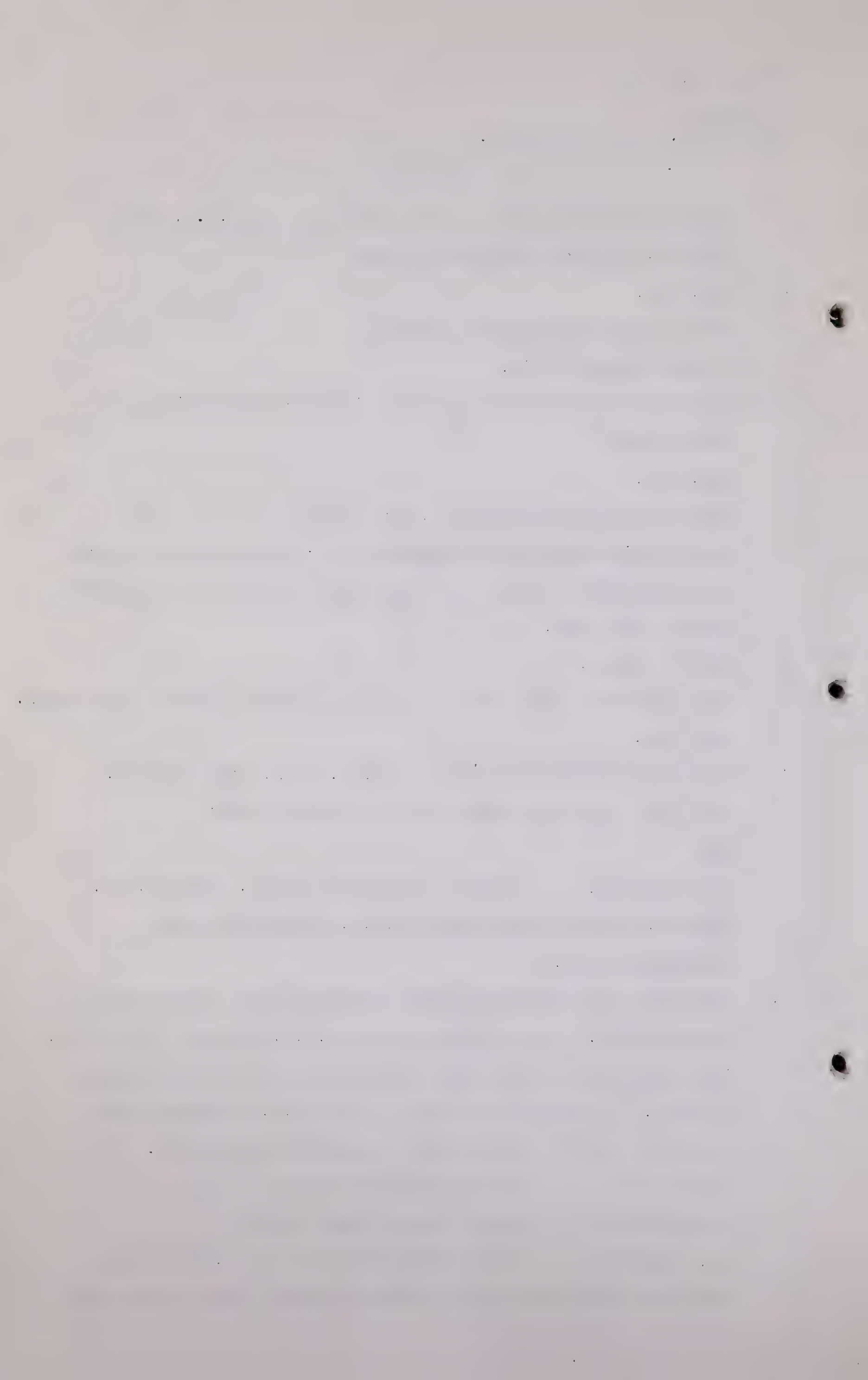
THE CHAIRMAN: That is Anthracite coal, I think, Mr. Chambers, with a much higher B.T.U. content than our bituminous coal.

A They have to my knowledge both anthracite and bituminous in Pennsylvania. It is higher in its B.T.U. content, I am sure, than Drumheller coal, which is more of a semi-lignite type of coal. It may not be higher in its B.T.U. content than Blairmore and the other coals. Anthracite would be.

Q MR. STEER: You say it may not be?

A It may not be. I do not know on that. Yes.

MR. CHAMBERS: If it would save time, Mr. Zinder can look that over tonight if he wants to and I can go on with



H. Zinder,  
Cross-Exam. by Mr. Chambers.

- 5051 -

something else.

THE CHAIRMAN: All right.

THE WITNESS: Yes.

MR. CHAMBERS: Then leave that. Now then, Mr. Zinder, my understanding of your Exhibit 135, as given in Part I of it, is that the value of natural gas to the ultimate consumer is measured by the cost of those competitive products, is that a short and general way of putting it?

A That is right.

Q In other words I take it that when gas is used as a fuel its value is measurable in terms of cost of competing fuels?

A That is right.

Q In this case, coal?

A That is right.

Q Now as you have already told me that you have several charts and appendices to this Exhibit 135 as to the value of coal on various classes of service and on page 6 you specifically state that no allowance has been made in these appendices or these charts for the extra cost of coal in terms of labor, labor in the use of it by the consumer, is that right?

A That is right.

Q And ash disposal.

A That is right.

Q Now let me talk first about this - and by the way, so far as the consumer is concerned, I am referring particularly to the commercial and industrial, if he is using coal he has to supply storage facilities.

A That is right.

Q And in the case of a large plant that uses a large amount of gas, if that operator switched to coal, I suggest to you that





H. Zinder,  
Cross-Exam. by Mr. Chambers.

- 5052 -

his storage facilities might amount to a considerable amount of money.

A That is very possible, yes.

Q But I also suggest to you that so far as the domestic consumer is concerned, that there is something far more important than straight dollars and cents, there is the matter of convenience and cleanliness. What have you to say to that?

A I think that is a definite factor.

Q As I understand it, in other words the figures that you have obtained in these appendices or in the narrative for the value of gas based on coal is the minimum value and not the highest value, is that right?

A It is a minimum in the sense that I have not added to it any evaluation of these other factors. It is the ceiling in terms of its relationship with coal.

Q And this thought occurs to me. In industrial purposes particularly, a company making an installation for coal would have to take into consideration his own peak load, wouldn't he?

A Oh yes.

Q And his rate, use and things of that kind?

A Yes.

Q In other words he would have to take that into consideration in deciding how big an installation he was going to make?

A That is right.

Q And when he comes to consider this matter of competitive costs, he would have to take into consideration not only his operating expenses but his capital charges on the equipment?

A Very much so, yes.

Q As I understand it you have not taken those things into consideration in these charts?

A No, I have not. In other words, I have said that they are

1. *Alfred Russel Wallace*

2. *Charles Darwin*

3. *Gregor Mendel*

H. Zinder,  
Cross-Exam. by Mr. Chambers.

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difficult to evaluate. You could do it for any particular installation but I do not know how you would do it without a great deal of effort and survey and time for an entire community. Therefore to that extent, any comparisons shown here are of course favourable to coal.

Q Now then, leaving those things out, and we understand you have not taken those into consideration at all so far as arriving at the dollars and cents, can you do this for me, using these graphs and charts that you have attached to Exhibit 135, can you calculate for me the minimum value of gas in competition with coal for the various classes of service and let us start with domestic.

A By "minimum" you mean it is a comparison using only the B.T.U. and efficiency factors?

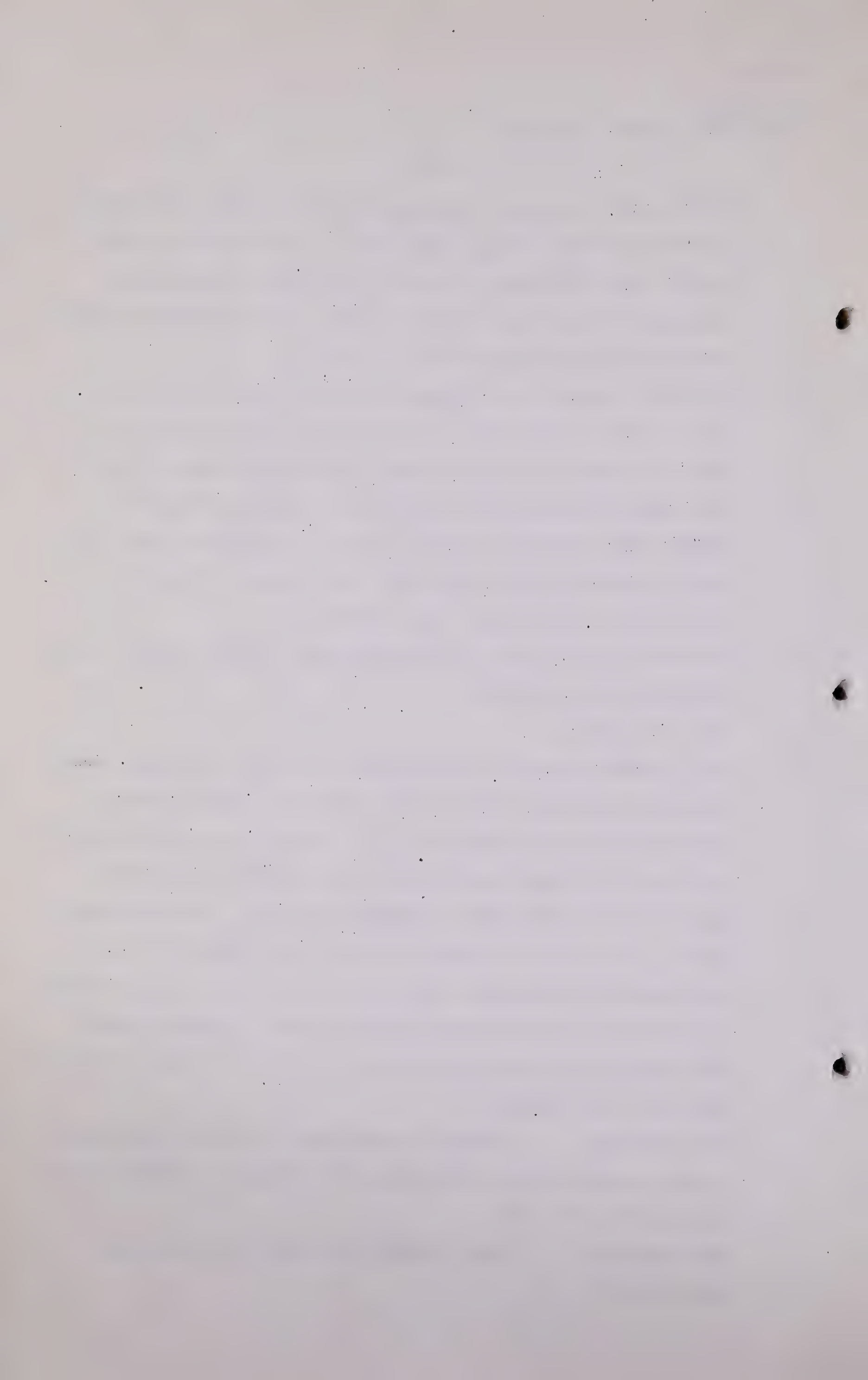
Q That is right.

A Well on domestic, as I have stated, it varies from 53.6 cents for Drumheller coal down to 29.9 cents for Priddis coal, These lines on the charts are at a uniform rate per MCF. Now for commercial service, the range is from 27.2 cents for Priddis coal to 35 cents for Drumheller coal. For industrial service, the range is from 23.4 cents for Drumheller coal to 33.7 cents for Blairmore coal. Now that is the slope of these lines for the various classes of service. In other words, any figure along those lines is at the rate of these particular figures I have quoted.

MR. CHAMBERS: Subject to dealing with that other thing in the morning, on this branch of Mr. Zinder's evidence that is all I have to ask.

THE CHAIRMAN: Does anybody else want to start now?

Mr. Harvie?





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MR. HARVIE: I prefer not to.

THE CHAIRMAN: I think we will adjourn to half past nine tomorrow morning.

MR. BLANCHARD: I am just wondering when the submission of the Gas Company will be dealt with, if there is any prediction at the present moment as to when this will be presented.

THE CHAIRMAN: I am quite willing to follow immediately after Mr. Zinder's evidence.

MR. BLANCHARD: That is what I wanted to know.

(At this stage the Hearing was adjourned until 9.30 A.M.

22nd January, 1946.)

. . . . .

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MR. HARRIS: I prefer not to.

THE CHAIRMAN: I think we will adjourn to half past nine.

Continued session.

MR. HARRIS: I am just wondering how the submission

of the new company will be made. If there is any

action at the present moment on this bill it will be presented.

THE CHAIRMAN: I am quite willing to follow immediately

after Mr. Harris's statement.

MR. HARRIS: There is what I would like to know.

Let this be the question now adjourned until 2.30 P.M.

2.30 P.M., 1931.







